OWNER'S MANUAL

16-BIT DIGITAL SYNTHESIZER
KC10

SPECTRA

KAWAI

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Thank you for purchasing Kawai 16-bit Digital Synthesizer SPECTRA KC10!

The KC10 uses advanced 16-bit and synthesized waveforms for optimum sound quality at an affordable price. And the unique function from KAWAI K series, such as MULTI patch and DRUM SECTION, allow you to create hi-quality musical performances.

Please read this manual thoroughly before using the KC10. It has been written to allow you to get the most of this instrument's capabilities with the least amount of effort.

FEATURES

128 High Quality Internal Waveforms

The KC10 has a total of 128 selectable wave combinations. Each combination is made from high-quality 16-bit PCM and DC (Digital Cyclic) waveforms.

MULTI Play Capabilities

4 SINGLE patches may be played at one time freely combining Layer and Split functions. enabling a wide range of warm and expressive sounds.

36 RHYTHM Patterns

The KC10 contains 36 preset rhythm patterns, which are suitable for any kind of musical environment such as rock, pops, jazz, latin and any others. These patterns come with INTRO/ENDING and FILL IN as well.

AUTO ARPEGGIATOR

This function allows you to play arpeggio patterns automatically, by pressing one chord on KC10's keyboard. There are many selectable forms (ex. UP, DOWN and RANDOM) which can also be used in SYNC with the rhythm patterns.

DRUM SECTION

The KC10 has its own DRUM SECTION which can be controlled independently from SINGLE patches or the 4 SECTIONs of a MULTI patch.

Variable Multi-Timbral Operation

In the MULTI PLAY Mode, each tone may be set to a specific MIDI channel, allowing the KC10 to function as though it were four MIDI tone generators. The variable Multi-Timbral function also allows the voice of each section to be played simultaneously.

Care and Maintenance

Proper Care

Your KC10 synthesizer is a delicate musical instrument. To prevent breakdowns and ensure years of reliable, trouble-free service, shield it from:

- Direct sunlight and exposure to the elements
- Extremes in temperature or humidity
- Dusty environment
- Vibration ... especially during transport

Power Supply

- Use only AC adaptor shipped with the KC10 and connect it only to a power supply with a voltage within the limits stated on the ratings plat on the backs.
- Make sure that all power switches are off before changing equipment connections.
- Check all equipment connections before applying the power.
- Do not connect to the same circuit as a heavy load or equipment that generates line noise.

Line Noise Reset

The high-speed microprocessor at the core of the KC10 is extremely sensitive to line noise and sudden fluctuations in the supply voltage. Should it "lock up" under such conditions, simply turn the KC10's power off for a few seconds and then reapply the power.

Cleaning

- Clean the instrument with a soft cloth, a mild detergent, and luke warm water.
- Never use harsh or abrasive cleansers or organic solvents.

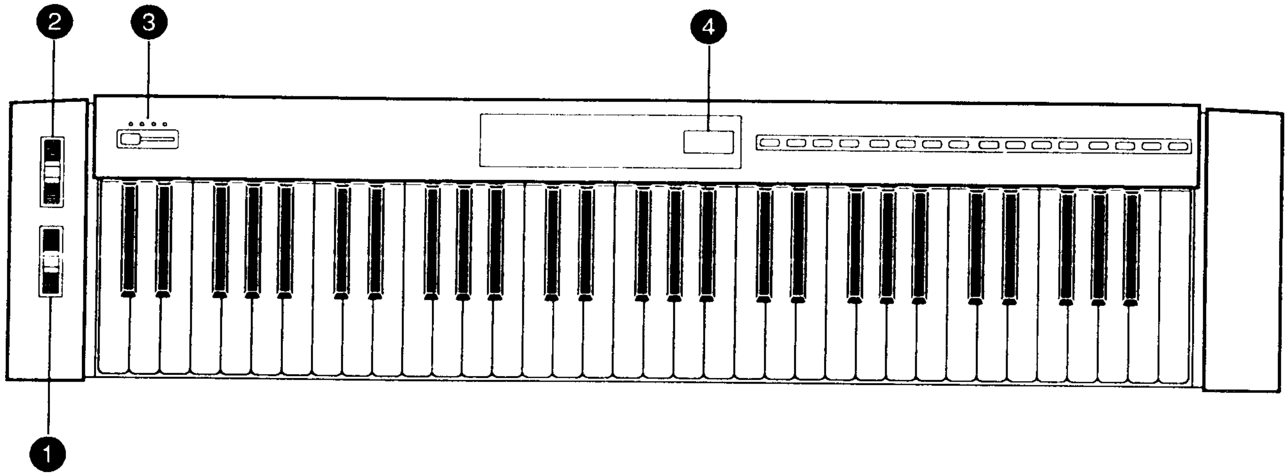
Battery Backup

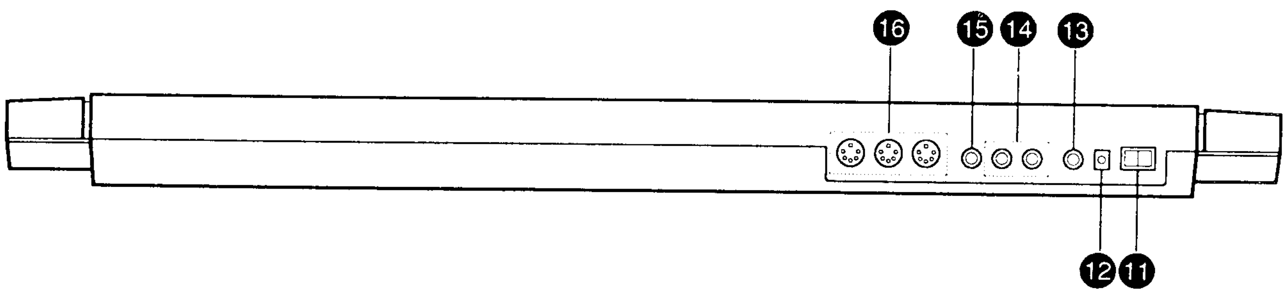
The lithium battery that protects the memory contents while the power to the unit is off is good for more than five years of normal use. We recommend, however, that you have your nearest authorized service representative replace it promptly after five years.

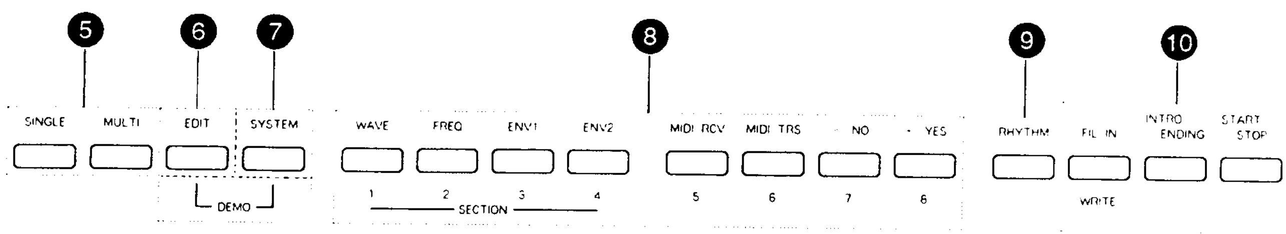
1

Let's Play KC10

1. Name of Parts





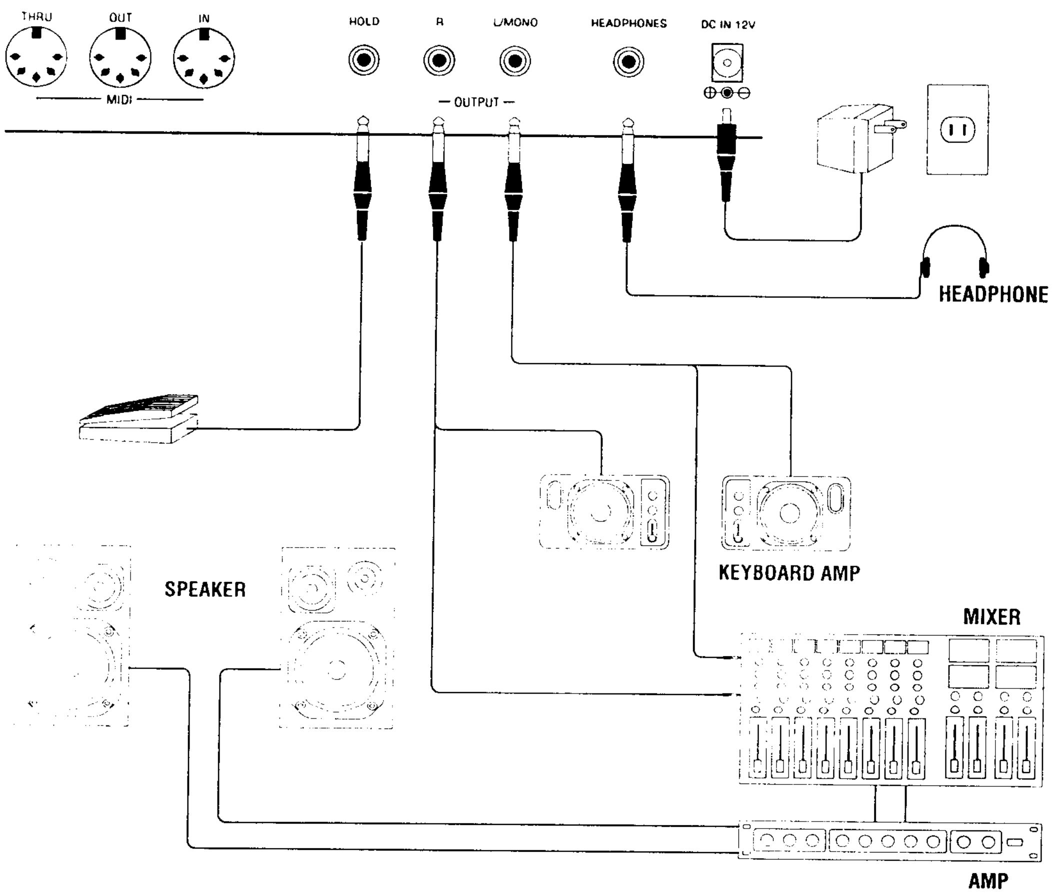


1. **PITCH BEND WHEEL**
   Controls continuous pitch change. The pitch of an electric guitar may be changed, for example, producing a wider range of sounds.
2. **MODULATION WHEEL**
   Controls continuous modulation of sounds (vibrato).
3. **VOLUME SLIDER**
   Used to adjust the sound output from the PHONES and output (R, L/MONO) jacks.
4. **DISPLAY**
   Indicates the patch number while playing, and the function number and value of parameter (alternately) during editing.
5. **PATCH SELECT SWITCH GROUP 1 (MULTI, SINGLE)**
   Selects between SINGLE and MULTI PLAY modes when selecting patches.
6. **EDIT SWITCH**
   Puts the KC10 into the EDIT mode to allow tones to be modified.
7. **SYSTEM SWITCH**
   Puts the KC10 into the SYSTEM mode.
8. **PATCH SELECT SWITCH GROUP 2 (1~8)**
   In PLAY mode:
   Selects a patch number. (See p. 10~12)
   During SINGLE editing:
   Selects the parameters to be edited. (See p. 22)
   During MULTI editing:
   Selects a SECTION to be edited. (See p. 31)
   In MIDI mode:
   Selects the MIDI parameters to be set. (See p. 44)
9. **RHYTHM SWITCH**
   Puts the KC10 into the RHYTHM mode.
10. **RHYTHM SWITCH GROUP (FILLIN, INTRO/ENDING, START/STOP)**
    Used to play RHYTHM patterns. (See p. 12~13)
11. **POWER SWITCH**
    Turns the instrument's power on and off.
12. **DC IN JACK**
    This jack is used to connect the external power supply.
13. **HEADPHONES JACK**
    The stereo headphone jack is used to monitor the sound of R and L/MONO output.
14. **OUTPUT JACK (R, L/MONO)**
    The output jacks are used to connect the unit to a keyboard amplifier or PA equipment.
15. **HOLD JACK**
    When an kawai F-1 or other foot switch (optional) is connected to this jack, it may be used to sustain the sound.
16. **MIDI jacks (IN, OUT, THRU)**
    These are used to connect equipment to other MIDI devices.

2. Basic Operation

A. Connections

(1) Connect the power adaptor and keyboard amp (or headphone) as shown in below.



> ***NOTE:*** *The KC10 has no internal power amp or speakers. In order to obtain sound output, you may either use headphones, or connect it to a keyboard amp or PA system. It is possible to use home radio cassette players or audio amps, but caution should be paid to when the power is turned on and to volume, etc., in order to avoid damage to these appliances.*

(2) Turn the POWER switch on. The unit is now ready to play.

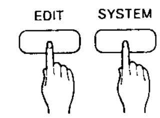
(3) Turn on the power of amps and other equipment connected to the KC10 after turning the KC10 on, to protect the other equipment.

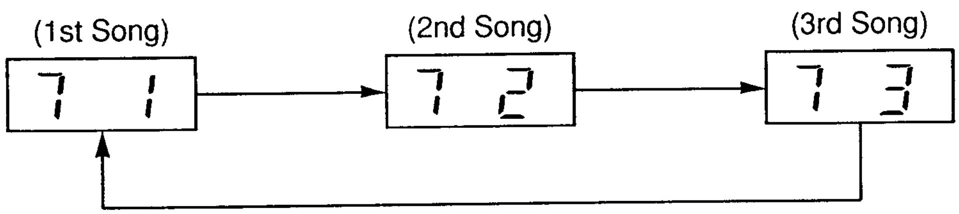
B. Demonstration Songs

The KC10 contains 3 demonstration songs which show the musical possibilities of KC10.
You can hear the songs by following the procedure below:

(1) Press EDIT and SYSTEM switches simultaneously.

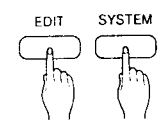
The first demonstration song begins to play.



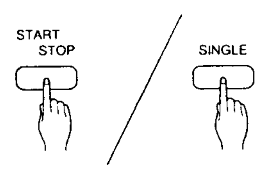


These 3 songs play successively. After the 3rd song ends, the 1st song begins again.

(2) To skip to the next song before the song's end, press EDIT and SYSTEM switches simultaneously.



(3) Press START/STOP or SINGLE switch to end the playing.



NOTE:	*Please note that recording these demo songs to tape or other medium is prohibited by law (except for your personal use).*

C. Selecting a Patch

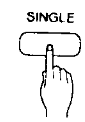
C-1 SINGLE Patch

In the KC10, each single tone color is referred to as a "SINGLE patch".
The KC10 has in total 96 SINGLE patches, 64 preset SINGLE patches and 32 user patches.

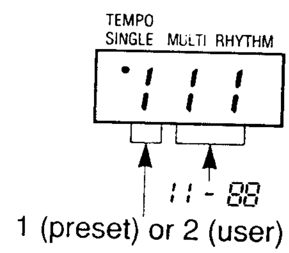
111 - 188	preset SINGLE patches
211 - 248	user SINGLE patches

To select and play a SINGLE patch, use the following procedure.

(1) First press the SINGLE switch to enter the SINGLE PLAY mode.



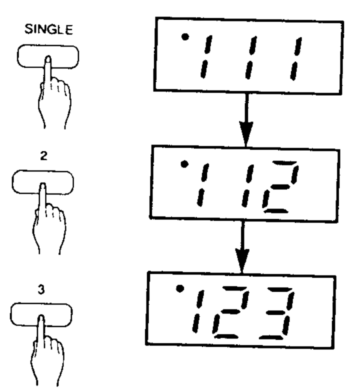
The LED dot "SINGLE" lights to show that now the KC10 is in the SINGLE mode, and displays what SINGLE patch is currently selected as follows:



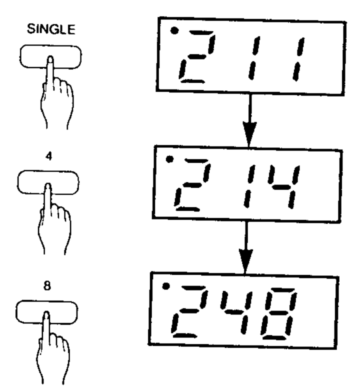
(2) Select a SINGLE patch number.

(a) Select "preset"(1) or "user"(2) by pressing SINGLE switch.
(b) Select a number by pressing two of 1~ 8 switches successively.

(Ex. 1) To select 123 "LOW PIANO" ...



(Ex. 2) To select 248 "SYN PAD2" ...



(3) Play the keyboard and listen to the sound of selected SINGLE patch.

C-2 MULTI Patch

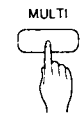
A MULTI patch is structured from up to 4 SINGLE patches. These 4 SINGLE patches are combined in "SECTION 1-4". Pitch, level, transpose, key zone and MIDI receive channel can be set for each SECTION. Using MULTI you can make more colorful and complex sound than only one SINGLE patch.

The KC10 has 16 MULTI patches in total(111- 118, 121- 128).

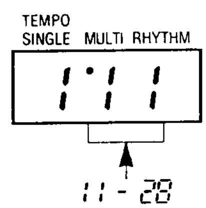
To select and play a MULTI patch, use the following procedure:

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(1) First press the MULTI switch to enter the MULTI PLAY mode.

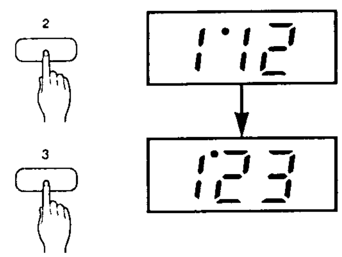


The LED dot "MULTI" lights to show that now the KC10 is in the MULTI mode, and displays what MULTI patch is currently selected as follows:



(2) Select a MULTI patch number by pressing two of 1 ~ 8 switches successively.

(Ex.) To select 123 "SPLIT 3" ...



(3) Play the keyboard and listen to the sound of the selected MULTI patch.

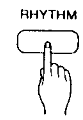
MULTI patches contain numerous settings. Pressing a few keys on the keyboard is not enough to allow you to completely determine what of patch settings have been made. It is possible to create a MULTI in which sounds play only in one area of the keyboard, or only via MIDI.

C-3 RHYTHM Pattern

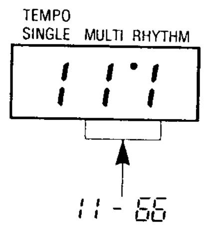
The KC10 contains 36 rhythm patterns. You can play these RHYTHM patterns with intro/ending and fill in.

To select and play a RHYTHM pattern, please take the following procedure.

(1) Firstly press the RHYTHM switch to enter the RHYTHM PLAY mode.



The LED dot "RHYTHM" lights to show that now the KC10 is in the RHYTHM PLAY mode, and displays what RHYTHM pattern is currently selected as follows:

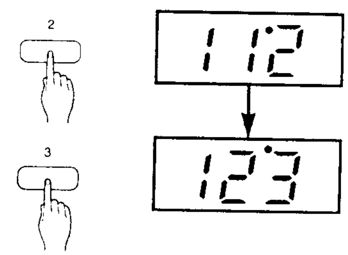


> ***Note:*** *In RHYTHM PLAY mode, KC10's keyboard produces the sound of the SINGLE (or MULTI) patch selected before entering RHYTHM mode.*

(2) Select a RHYTHM pattern number.

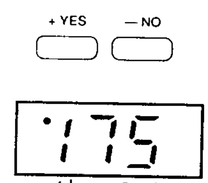
Press two of the 1 ~ 6 switches successively.

(Ex.) To select 123 "SLAP FUNK" ...



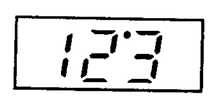
(3) To change the tempo:

Press the +YES (or –NO) switch to increase (decrease) the tempo.
The LED shows the tempo now selected.



(♩= 175)

Pressing RHYTHM switch recalls the RHYTHM pattern number.

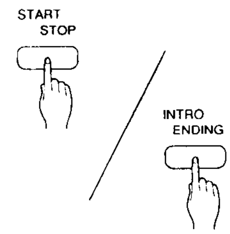


> ***Note:*** *After selecting a RHYTHM pattern, you can return to SINGLE (or MULTI) PLAY mode by pressing SINGLE (or MULTI) switch.*

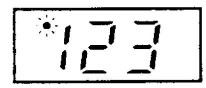
(4) To start playing the rhythm:

Press START/STOP switch ...
The RHYTHM pattern starts to play normally.

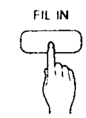
Or press INTRO/ENDING switch ...
The pattern starts with introduction.



During RHYTHM pattern playing, LED dot "TEMPO/SINGLE" flashed at the beginning of every bar.



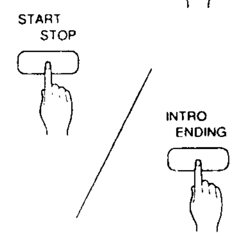
(5) Press the FILL IN switch to add the fill in pattern.



(6) To stop playing:

Press the START/STOP switch ...
The pattern stops normally.

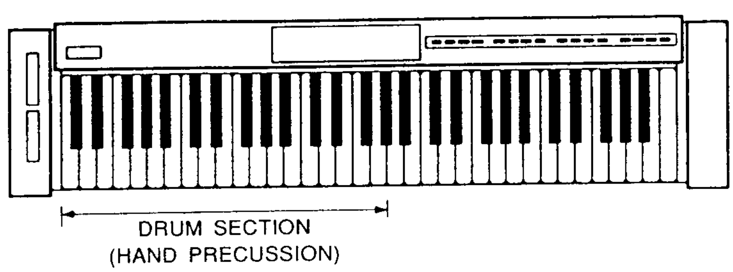
Or press the INTRO/ENDING switch ...
The pattern stops with ending.



DRUM SECTION (HAND PERCUSSION)

The DRUM SECTION is a separate programmable section of the KC10, independent from any SINGLE or MULTI patch.

Drum sounds are programmed for each note on C1~G3 range of the KC10's keyboard (See p. 58 "DRUM SECTION Key Assignment"). These sounds can be played from the KC10's keyboard, and are also available for use with a sequencer or other MIDI device (See p. 53 "Playing Using A Sequencer/Computer".)



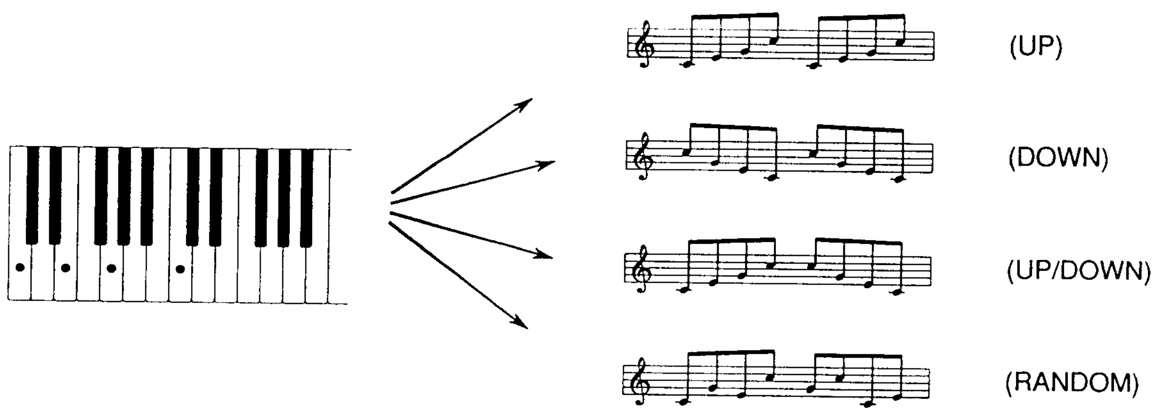
To play the DRUM SECTION from the KC10's keyboard, it is necessary to set "HAND PERCUSSION ON/OFF" to ON. (See p.37 "RHYTHM Edit Parameters".)

> **Note:** *During the HAND PERCUSSION ON/OFF is ON, the keyboard above G3 produces no sound.*
> *When you return to SINGLE/MULTI PLAY mode (See p. 10/11), this HAND PERCUSSION operation will be canceled.*

AUTO ARPEGGIATOR

This function allows you to play the arpeggio patterns automatically, only by pressing one chord on KC10's keyboard (range: C1~B2).

(EX.) when you press C chord:



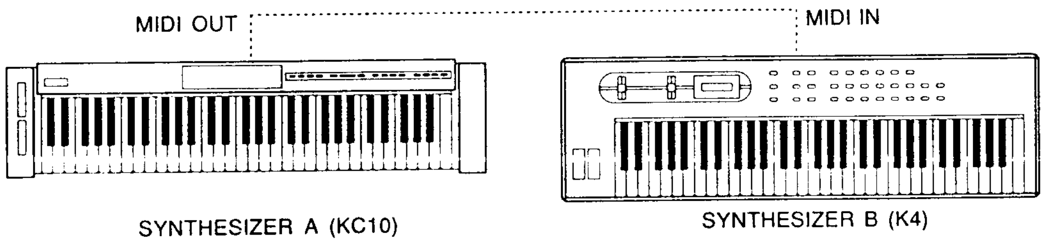
To use this function, it is necessary to set "AUTO ARPEGGIATOR ON/OFF" to ON. (See p. 37~39 "RHYTHM Edit Parameters".)

Note: *This function is not available under the following circumstance:*
- *When the HAND PERCUSSION ON/OFF (See above) is set to ON.*
- *In the MULTI PLAY mode.*

3. Fundamental of MIDI

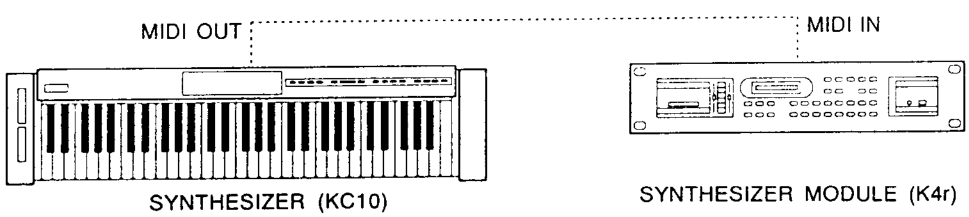
The letter MIDI stand for Musical Instrument Digital Interface, an international standard for connecting synthesizers, drum machines and other electronic instruments so that they can exchange performance data.
If you use MIDI with your KC10, the following operations will be available.

(1) Connecting to another synthesizer



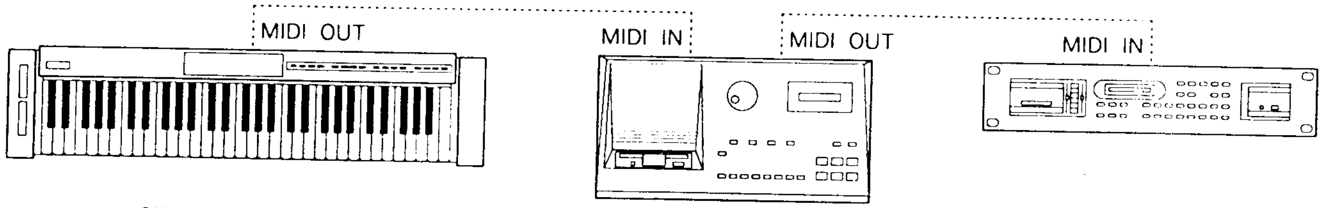
When connected as shown in the illustration, you can generate the sound of K4 by playing the keyboard of KC10, because the MIDI data is transmitted from KC10 to K4.
Since tone color can be set separately, you can assembly a wide variety of sound combinations, such as a PIANO tone from the KC10 layered with a STRING tone from the K4 for a thick sound.

(2) Connecting to a synthesizer module



Same as (1), you can transmit MIDI data by playing KC10's keyboard to K4r and make sounds from KC10.

(3) Connecting to a sequencer/synthesizer module



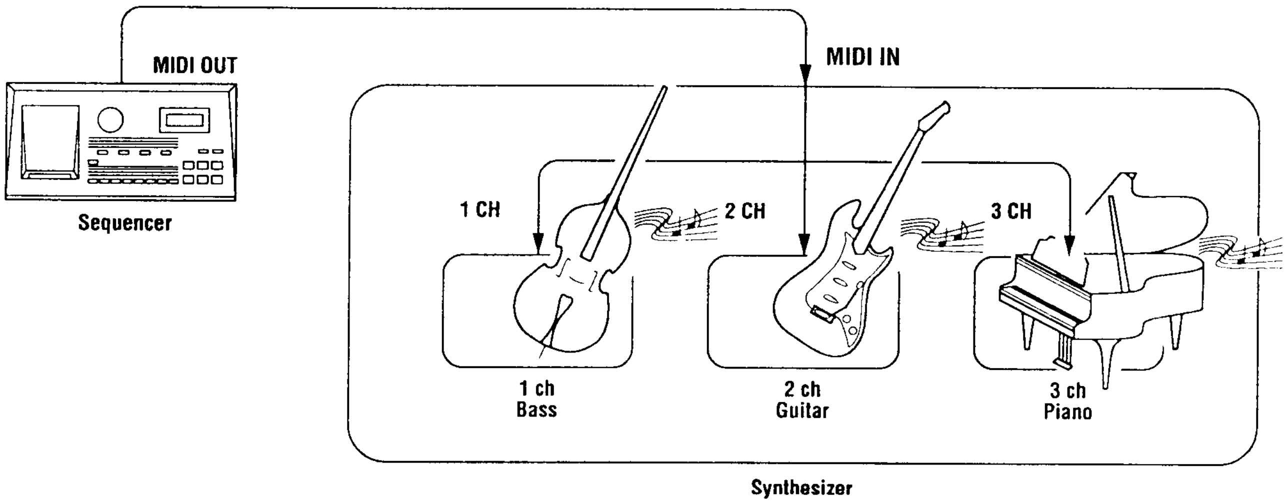
"Sequencer" is the device which allows you to record and playback MIDI data. On the above setting, if you once record MIDI data by playing KC10, you can playback your performance anytime (without playing keyboard again!). And also it is possible to play a synth solo by KC10 with backing ensemble of Q-80 and K4r.

If you want to know about the more detailed knowledge of MIDI, please see the following page "MIDI Information".

MIDI Information

MIDI Channel

With MIDI, any number of instruments may be controlled from a single source, Thus, in order to be able to distinguish one instrument from another, it is possible to assign a channel number from 1-16 to each. When performance data is transmitted, the channel number is transmitted at the head of the information to identify for which machine the information is intended.
This number is called the MIDI channel. When the instrument is one which supports multi timbres, you will want to control each part, so MIDI channels will have to be allotted to each.



Mode

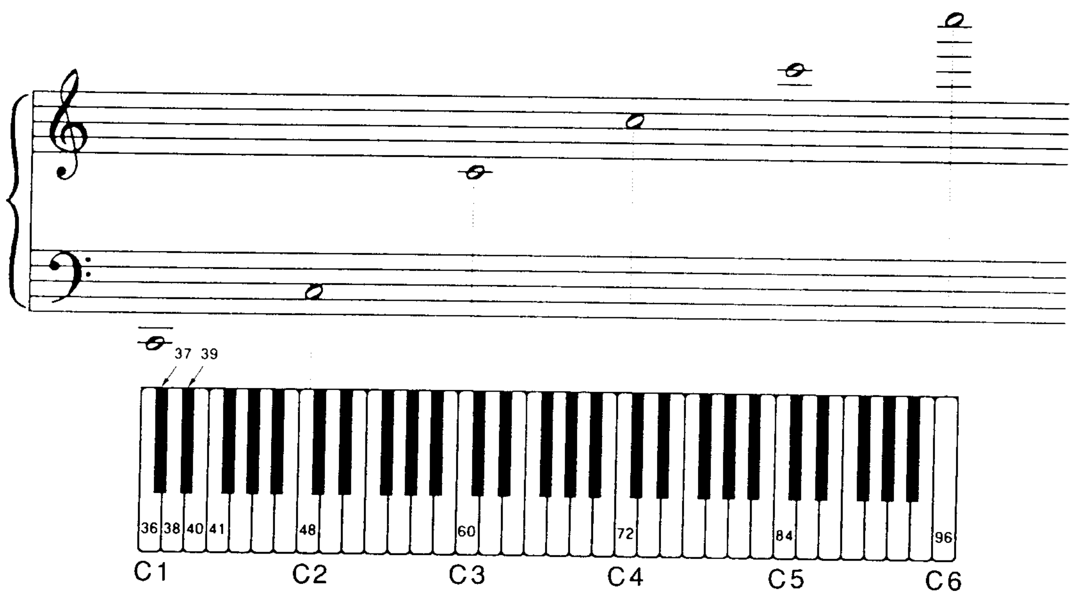
In addition to the channel on which MIDI information is transmitted, information may also be transmitted in different modes. There are both POLY and MONO modes, to determine if the performance data received is to be played polyphonically or monophonically. (KC10 operates only in the POLY mode.)
Both of these modes may be set for OMNI ON or OMNI OFF, and when set for OMNI ON, information from all MIDI channels may received and sound produced.

Note Information

Of the different types of performance data which can be transmitted via MIDI, the most basic is the note message.
Note messages indicate such information as which key has been pressed (NOTE ON, NOTE Number) with how much force(VELOCITY), and when it was released (NOTE OFF).

- **Note number**

  In order to enable the control instrument to differentiate between keys when they are played, a number is assigned to each, called a note number. Middle C (C3) is MIDI note number 60, and each note number corresponds to a half tone, or one key on the keyboard.
  (MIDI devides the half tones from C-2 to G8 into 128 steps, numbering them in sequence from lowest to highest.)



- **Velocity**

  This is a message which tells with how much force a key on the keyboard was pressed (velocity is detected not by the pressure on the key, but by the speed of its movement at the time the NOTE ON message is sent.).

Program Change

Most MIDI instruments currently in use allow setting, tones, and other data to be programmed. These programs can be switched by a message from the master instrument. This type of message is called a PROGRAM CHANGE.
Since MIDI standard say only that numbers from 0 to 127 can be used as PROGRAM CHANGE data, the items in the tone memory that correspond to the PROGRAM CHANGE numbers are different for every type of instrument.

Control Change

Besides information regarding when a key has been pressed and released and so on, volume, vibrato, hold, portament on/off, damper and soft pedal on/off, pan and aftertouch information, etc., are functions which may be handled in many different ways as performance data. These are transmitted as CONTROL CHANGE message.

Pitch Bend

This is a message which tells just how far the pitch bend wheel has been turned. The maximum amount of pitch bend is usually programmed in the synthesizer's patch data. Therefore, pitch range depth may differ between instruments.

Exclusive Message

While MIDI is a standard accepted world-wide, in order to get the most out of the different types of equipment produced by different manufacturers, each produces to some extent, their own independent specifications. These are outside of the specifications prescribed by MIDI, and consist of messages for the transmission and reception of information unique to a particular piece of equipment. Called SYSTEM EXCLUSIVE messages, these may be used to exchange tone data between equipment produced by the same manufacturer and for storing tone data to a computer.

2

Edit the Sound

"Editing" is the creation or alteration of synthesizer tones and settings.

If you want to:
- change the KC10's SINGLE patch sound as you like,
- or to change the structure of MULTI patch's SECTION,
- and to select other setting on RHYTHM patch/AUTO ARRPEGIATOR,

please read this chapter carefully and take your desired operation.

1. SINGLE Patch Editing

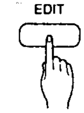
A. Editing Operation

To edit a SINGLE patch, it is necessary to enter SINGLE EDIT mode by pressing the EDIT switch.

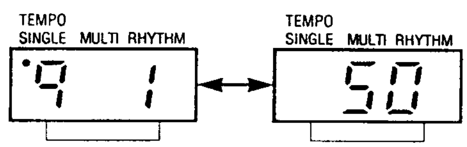
Basic Operation

(1) Select the SINGLE patch which you want to edit (See p. 10).

(2) Press the EDIT switch to enter the SINGLE EDIT mode.



The LED shows the function/parameter number and its value alternately.

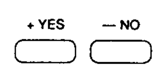


function/parameter No. Value

(3) Call up the function/parameter by pressing one of the EDIT, WAVE, FREQ, ENV1, ENV2 switches . (See p. 23)



(4) Change the parameter's value with +YES and –NO switches. (If you have any other parameter to be edited, repeat (3) and (4).)



(5) Write the edited SINGLE patch (See p. 30).



B. SINGLE Edit Parameters

There are 5 groups of function/parameter in KC10's SINGLE EDIT mode. So each group consists of function which has a similar character, that you can easily understand what function you should call up to make your desired change on SINGLE patch.

The following chart is the table of all KC10's SINGLE EDIT parameters:

	Function No.	Name	Value Range	Ref. p.
EDIT Group	9 1	VOLUME	0 - 63	p. 24
	9 2	KEY FIX	0 or 1	p. 24
	9 3	FIXED KEY NO.	24 - 108	p. 24
	9 4	CHORUS ON/OFF	0 or 1	p. 24
WAVE Group	101	WAVE SELECT	1 - 128	p. 25
	102	SOLO ON/OFF	0 or 1	p. 25
FREQ Group	111	VIBRATO SPEED	0 - 31	p. 25
	112	VIBRATO DEPTH	0 - 31	p. 25
	113	VIBRATO SHAPE	1 / 2 / 3 / 4	p. 26
	114	AUTO BEND TIME	0 - 31	p. 26
	115	AUTO BEND DEPTH	±31	p. 26
ENV1 Group	121/131	LEVEL	0 - 31	p. 27
ENV2	122/132	ATTACK TIME	0 - 31	p. 28
	123/133	DECAY TIME	0 - 31	p. 28
	124/134	SUSTAIN LEVEL	0 - 31	p. 28
	125/135	RELEASE TIME	0 - 31	p. 29
	126/136	KS ENVELOPE LEVEL	±15	p. 29
	127/137	VELOCITY CURVE	1 / 2 / 3 / 4	p. 29

EDIT Group

9 1 VOLUME

This controls the whole volume of SINGLE patch.
The differences in volume between patches are adjusted so as to avoid any unnaturalness when switching between patches.

Value	Effects
0	Minimum Level
|	
63	Maximum Level

9 2 KEY FIX

This selects whether pitch is to change depending on the key struck.
The keys scale normally when OFF (1), but will be fixed at the pitch specified by FIXED KEY NO. when off (0).

Value	Effects
0	ON
1	OFF

9 3 FIXED KEY NO.

Fix the pitch of the SINGLE patch to a particular pitch.

Value	Effects
0	C0
|	
108	C7

9 4 CHORUS ON/OFF

Selects whether the "chorus" effect is added to the SINGLE sound or not.

Value	Effects
0	OFF
1	ON

WAVE Group

101 WAVE

This selects the desired waveform from the 128 waveforms available.

***NOTE:** See WAVE LIST (p.66) for available waveforms.*

Value	Effects
1	Wave No. 1
|	
128	Wave No. 128

102 SOLO ON/OFF

Sets the way the SINGLE patch is to sound, polyphonic or monophonic (SOLO).

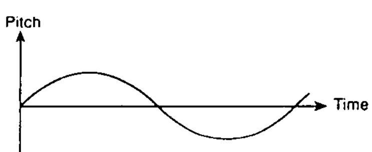
***NOTE:** When set to 0, 10-note polyphony is available.*

Value	Effects
0	OFF
1	ON

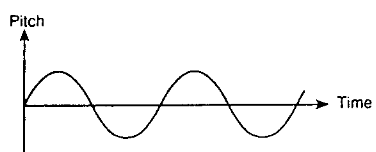
FREQ Group

111 VIBRATO SPEED

Sets the vibrato speed.



Slow vibrato

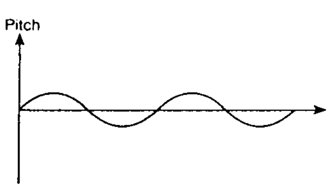


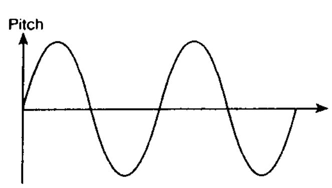
Rapid vibrato

Value	Effects
0	Slow Vibrato
|	
31	Rapid Vibrato

112 VIBRATO DEPTH

Sets the depth of change of Vibrato pitch variation.



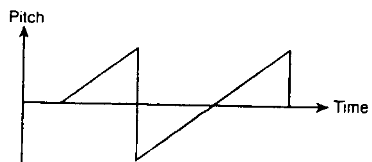


***NOTE:** The amount of time after a key is pressed until vibrato takes effect can be set with AUTO BEND TIME (114).*

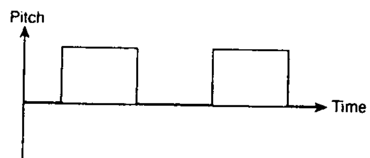
Value	Effects
0	No Vibrato
|	
31	Maximum Vibrato

113 VIBRATO SHAPE

Sets how the pitch is to be shaped.



Sawtooth (SAW)



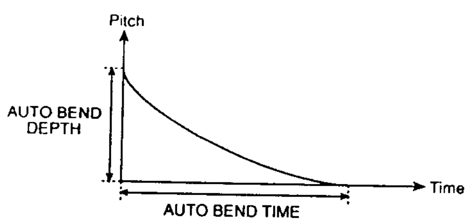
Square (SQR)

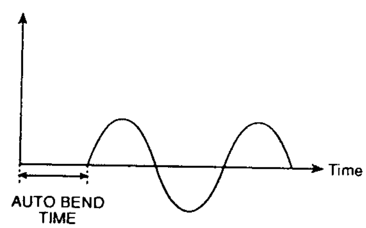
Value	Effects
1	TRI
2	SAW
3	SQR
4	RND Random variation

114 AUTO BEND TIME

Sets the time for the AUTO BEND (automatic bend) function (See next) and the delay before the start of the vibrato effect (See 112).

Value	Effects
0	No Effect
|	
31	Maximum Period

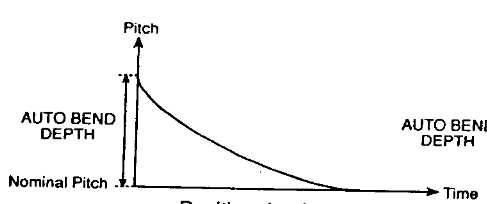




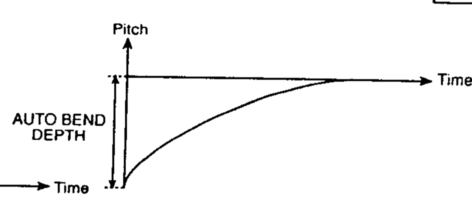
115 AUTO BEND DEPTH

Sets how the pitch alters as each key is struck – the AUTO BEND effect.

Value	Effects
+31	Pitch drops to nominal value
|	
0	No effect
|	
–31	Pitch rises to nominal value



Positive depth

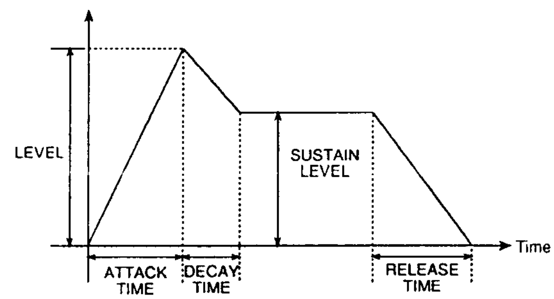


Negative depth

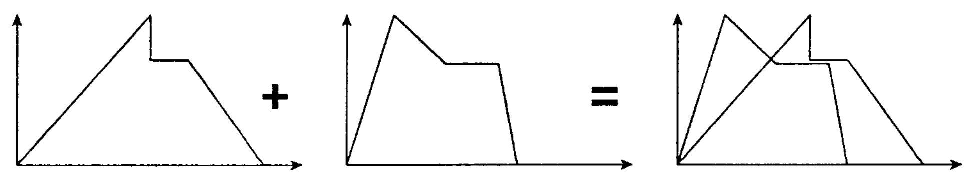
ENV1 (ENV2) Group

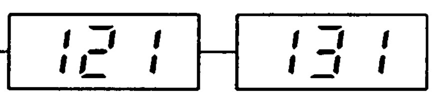
The parameters in this group determine the "envelope", the way the volume of a sound changes with time.

For example, a note on a piano begins to fade immediately after you strike it, but one on an organ stays at the same volume until you release the key. The graph below defines the five phrases of the envelope:



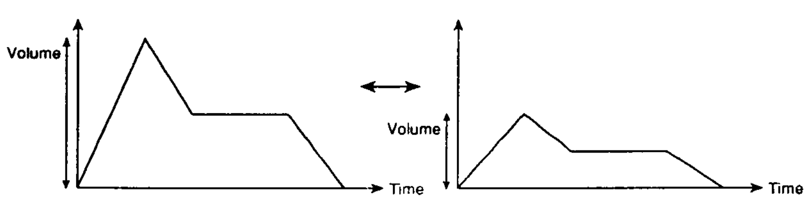
The KC10 allows you to set 2 different envelope (ENV1 and ENV2) for one SINGLE patch, and make a complex sound by mixing them.





LEVEL

This adjusts the initial level for each of ENV1 and ENV2.

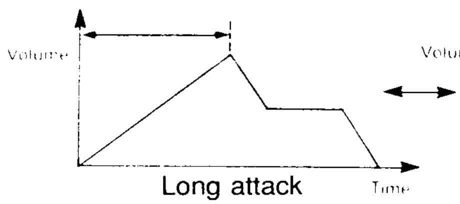


Value	Effects
0	No Output
|	
31	Maximum Level

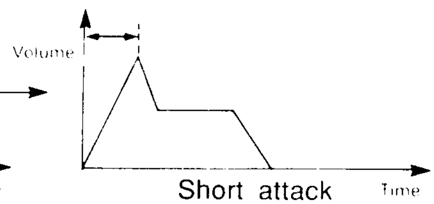
122 132 ATTACK TIME

This sets the time from the start of the sound until the peak volume is reached (for each of ENV1 and ENV2).

Value	Effects
0	Short Attack
|	
31	Long Attack



Long attack
(leisurely rise)

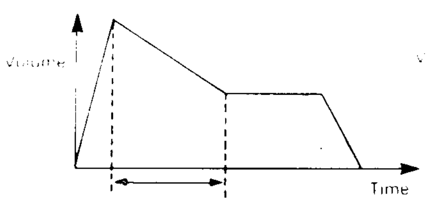


Short attack

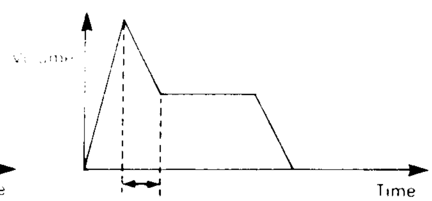
123 133 DECAY TIME

This sets the time from peak volume to the sustain level (for each ENV).

Value	Effects
0	Instantaneous Drop
|	
31	Gradual Drop



Long decay

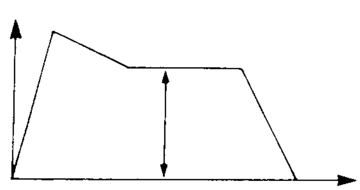


Short decay

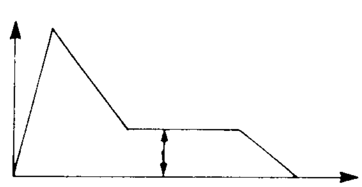
124 134 SUSTAIN LEVEL

This sets the stable level which will be maintained as long as the key is held down (for each ENV).

Value	Effects
0	Low Sustain
|	
31	High Sustain



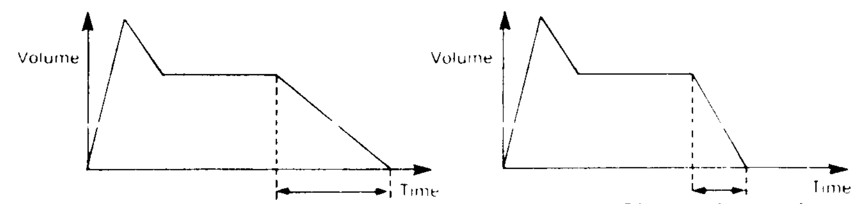
High sustain level (e.g. organ)



Low sustain level (e.g. piano)

125 — 135 RELEASE TIME

This sets the time from the point when the key is released until the sound disappears (for each ENV)

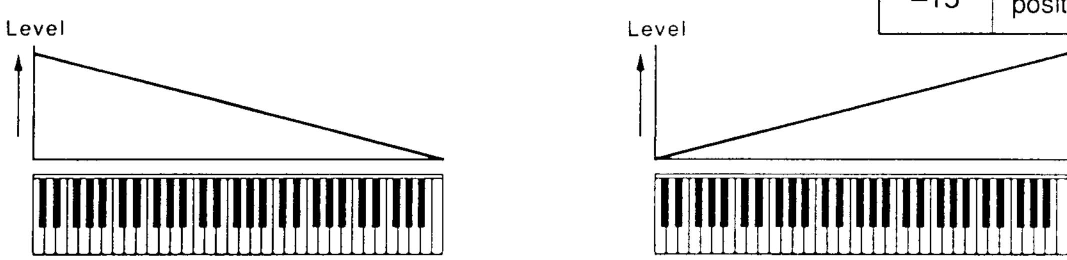


Value	Effects
0	Short Release
|	
31	Long Release

126 — 136 KS(KEY SCALING) ENVELOPE LEVEL

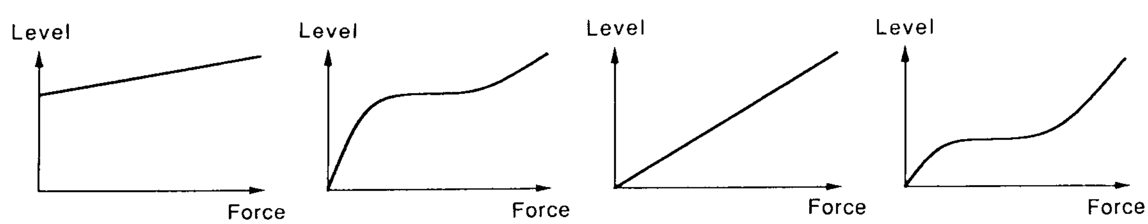
This changes the volume level according to the position (high or low note) of the struck key (for each ENV).
Setting a positive value (+1~+15) increases the volume on high position, while a negative value increases on low position.

Value	Effects
+15	Increase the volume on high position
|	
0	No effect
|	
−15	Increase the volume on low position



127 — 137 VELOCITY CURVE

You can select the way in which volume is changed by how hard the key is struck, choosing from the following 4 curves.

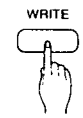


0 1 2 3

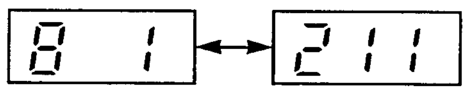
C. Writing A Edited SINGLE Patch

If you want to store the edited SINGLE patch, write it to one of 32 user SINGLE patch area with the following procedure.

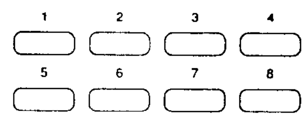
(1) After finishing editing, press WRITE switch.



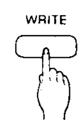
LED begins to show the WRITE function number (8 1) and user SINGLE patch number alternately.



(2) Select one patch number (for storage) using 1 ~ 8 switches. (See p.10 "C-1 SINGLE Patch)



(3) Press WRITE switch again.



LED shows selected patch number and KC10 returns to SINGLE PLAY mode.

> ***NOTE:*** *This procedure erases the data previously stored in the selected patch. If you want to recall the factory-preset SINGLE patch data, use the RESET procedure (See p. 55).*

2. MULTI Patch Editing

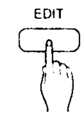
A. Editing Operation

To edit a MULTI patch, it is necessary to enter the MULTI EDIT mode by pressing the EDIT switch.

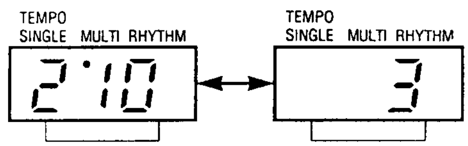
Basic Operation

(1) Select the MULTI patch you want to edit (See p. 11).

(2) Press the EDIT switch to enter the MULTI EDIT mode.

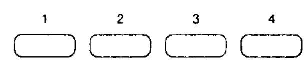


The LED shows the function/parameter number
and its value alternately.

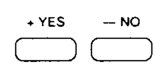


function/parameter No. Value

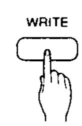
(3) Call up the SECTION and its function/parameter
by pressing one of the switches sometimes.
(See p. 32)



(4) Change the parameter's value with the +YES
and –NO switches.(If you have any other SECTION
to the edited, repeat (3) and (4).)



(5) Write the edited MULTI patch (See p. 35).



B. MULTI Edit Parameters

A MULTI patch is a combination of up to 4 SINGLE patches. Each of the 4 SINGLE patches are used in SECTIONs 1 - 4.
MULTI patches have no parameters for creating tones – MULTI EDIT parameters are used to set how the tone of each SECTION is to be played.

The following chart is the table of all MULTI EDIT parameters:

SECTION 1	SECTION 2	SECTION 3	SECTION 4
SECTION PLAY	SECTION PLAY	SECTION PLAY	SECTION PLAY
SINGLE ASSIGN	SINGLE ASSIGN	SINGLE ASSIGN	SINGLE ASSIGN
RECEIVE CHANNEL	RECEIVE CHANNEL	RECEIVE CHANNEL	RECEIVE CHANNEL
TUNE	TUNE	TUNE	TUNE
LEVEL	LEVEL	LEVEL	LEVEL
TRANSPOSE	TRANSPOSE	TRANSPOSE	TRANSPOSE
ZONE HI	ZONE HI	ZONE HI	ZONE HI
ZONE LO	ZONE LO	ZONE LO	ZONE LO

MULTI PATCH

Function No./Name	Value	Ref. p.
2*0 SECTION PLAY	0 /1/ 2 / 3	p. 33
2*1 SINGLE ASSIGN	111 - 248	p. 33
2*2 RECEIVE CHANNEL	1 - 9, 11 - 16	p. 33
2*3 TUNE	±10	p. 33
2*4 LEVEL	0 -31	p. 34
2*5 TRANSPOSE	±12	p. 34
2*6 ZONE HI	36 - 96	p. 34
2*7 ZONE LO	36 - 96	p. 34

Though these parameters are the same for each of SECTIONs 1~4, LED displays the different number to show which SECTION is now edited as follows:

(SECTION 1)	(SECTION 2)	(SECTION 3)	(SECTION 4)
2 10	220	230	240

This chapter explains the details of MULTI EDIT parameters using SECTION 1 as an instance.

210 SECTION PLAY

Sets the way the SECTION is to be played.

OFF: The SECTION produces no sound.
KYBD: Produces sound only when the keyboard is played.
MIDI: Produces sound only when receiving MIDI data from external MIDI device.
MIX: Produces sound both keyboard and MIDI data.

Value	Effects
0	OFF
1	KYBD
2	MIDI
3	MIX

211 SINGLE ASSIGN

Selects a SINGLE patch to be played in each SECTION.

Value	Effects
111	SINGLE Patch No. 111
|	
248	SINGLE Patch No. 248

212 RECEIVE CHANNEL

Sets the MIDI receivie channel for each SECTION.

> ***NOTE:*** *In this mode you cannot set the value 10, because the channel 10 is fixed for DRUM SECTION.*

When you set different MIDI receive channels for each SECTION with this parameter, you can play an ensemble performance using only the KC10 and a sequencer/computer. (See p.53 "Playing using a Sequencer/Computer")

Value	Effects
1	Channel 1
|	
9	Channel 9
11	Channel 11
|	
16	Channel 16

213 TUNE

This performs fine tuning for SECTION pitch.
You can create a thicker sound by slightly varying the pitch of several SECTIONS with the same tone.

Value	Effects
-10	Semitone Lower
|	
0	Standard Pitch
|	
+10	Semitone Higher

2 14 LEVEL

Sets the level for each SECTION.

Value	Effects
0	Minimum Level
|	
31	Maximum Level

2 15 TRANSPOSE

This transposes the pitch of the SECTION up and down in half steps.
By layering a SECTION in normal pitch with SECTION transposed by 5 or 12 half steps, you can play harmonies in a 5th or a full octave with one finger.
Setting can be made within a range of two octaves.

Value	Effects
−12	Octave Lower
|	
0	Standard Pitch
|	
+12	Octave Higher

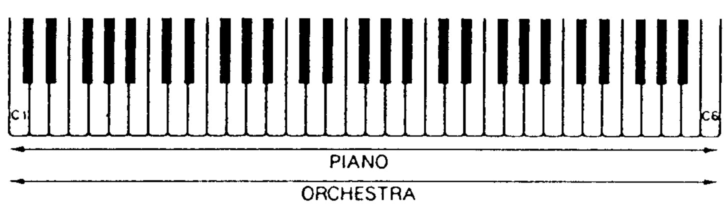
2 16 ZONE HI — 2 17 ZONE LO

Set the upper and lower limits for the tone range of the SECTION.

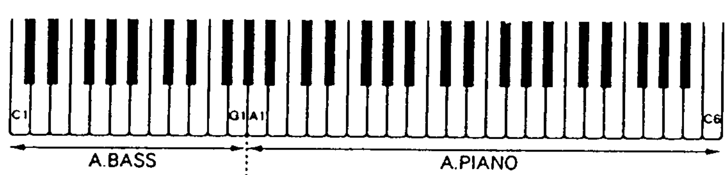
By using these two parameters, a "Layer"(combining two or more sounds into one) or "Split"(dividing a keyboard into several zones, assigning a different sound for each) can be created as follows:

Value	Effects
36	C1
|	
96	C6

(Layer)



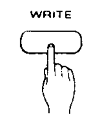
(Split)



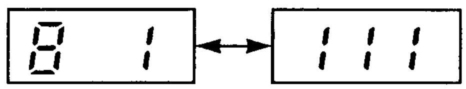
C. Writing An Edited MULTI Patch

If you want to store the edited MULTI patch, write it one of 16 MULTI patch locations using the following procedure.

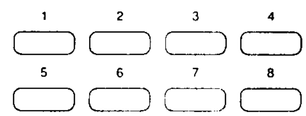
(1) After finishing editing, press the WRITE switch.



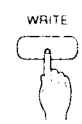
LED begins to show the WRITE function number 8 1 and patch number alternately.



(2) Select one patch number (for storage) using the 1 ~ 8 switches.(See p.11 "C-2 MULTI Patch)



(3) Press WRITE switch again.



LED shows selected patch number and KC10 returns to MULTI PLAY mode.

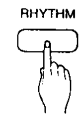
NOTE: *This procedure erases the data previously stored in the selected patch. If you want to recall the factory-preset MULTI patch data, use the RESET procedure (See p. 55)*

3. RHYTHM Editing

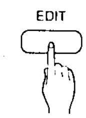
A. Editing Operation

Enter the RHYTHM EDIT mode to change the settings of RHYTHM PLAY mode with the procedure below:

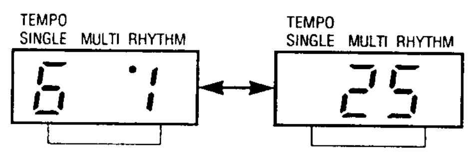
(1) First press the RHYTHM switch to enter the RHYTHM PLAY mode. (See p.12)



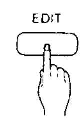
(2) Press the EDIT switch.



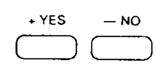
The LED shows the function/parameter number and its value alternately.



(3) Press EDIT sometimes until the desired function number appears. (See the following parameter chart.)



(4) Change the parameter's value with +YES and –NO switches.(Repeat (3) and (4) to change all parameters you need.)

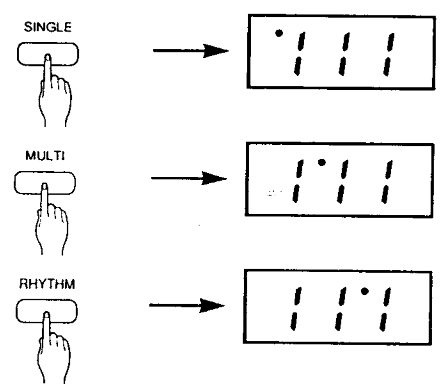


(5) To leave the EDIT mode:

(a) Press SINGLE switch → returns to SINGLE PLAY mode.

(b) Press MULTI switch → returns to MULTI PLAY mode.

(c) Press RHYTHM switch → returns to RHYTHM PLAY mode.



B. RHYTHM Edit Parameters

Function No./Name		Value Range	Ref. p.
6 1	RHYTHM VOLUME	0 - 31	p. 37
6 2	HAND PERCUSSION ON/OFF	0 or 1	p. 37
6 3	AUTO ARPEGGIATOR ON/OFF	0 or 1	p. 37
6 4	AUTO ARPEGGIATOR FORM	0 / 1 / 2 / 3	p. 38
6 5	AUTO ARPEGGIATOR RANGE	0 / 1 / 2	p. 38
6 6	AUTO ARPEGGIATOR BEAT	0 or 1	p. 38
6 7	AUTO ARPEGGIATOR TONE	0 - 7	p. 38
6 8	AUTO FILL IN ON/OFF	0 or 1	p. 39
6 9	AUTO ARPEGGIATOR VOLUME	0 - 63	p. 39

6 1 RHYTHM VOLUME

Sets the volume of RHYTHM patterns and DRUM SECTION.

Value	Effects
0	Minimum Volume
|	
31	Maximum Volume

6 2 HAND PERCUSSION ON/OFF

Sets whether the DRUM SECTION (See p.13) can be played from KC10's keyboard. If on, KC10's keyboard produces the sound of drum/percussion instruments (1 sound for each key).

NOTE: *See p.58 "DRUM SECTION Key Assignment" to know what sound is assigned to each key.*

Value	Effects
0	OFF
1	ON

6 3 AUTO ARPEGGIATOR ON/OFF

Sets whether the AUTO ARPEGGIATOR function is on or off.

NOTE: *This parameter will be automatically turned to 0(OFF) when turning the KC10's power OFF and ON again. If the HAND PERCUSSION ON/OFF is set to ON, the AUTO ARPEGGIATOR is always unavailable.*

Value	Effects
0	OFF
1	ON

6 4 AUTO ARPEGGIATOR FORM

Sets whether AUTO ARPEGGIATOR pattern plays UP, DOWN, or RANDOM.

UP: playing chord notes raising up.
DOWN: playing chord notes falling down.
UP/DOWN: repeating UP and DOWN.
RANDOM: playing chord notes randomly.

Value	Effects
0	UP
1	DOWN
2	UP/DOWN
3	RANDOM

6 5 AUTO ARPEGGIATOR RANGE

Sets the note range in which AUTO ARPEGGIATOR plays.
(1 octave/2 octave/3 octave)

Value	Effects
0	1 Octave
1	2 Octave
2	3 Octave

6 6 AUTO ARPEGGIATOR BEAT

Sets whether AUTO ARPEGGIATOR plays in quarter note or sixteenth note.

Value	Effects
0	Quarter Note
1	Sixteenth Note

6 7 AUTO ARPEGGIATOR TONE

Selects a tone color with which AUTO ARPEGGIATOR plays.
8 tone colors are available.

0 SYN BASS	2 FRETLESS	4 SPIELUHR	6 CLAVI
1 PIANO 1	3 FAST STRINGS	5 NYLON	7 SHARP BASS

68 AUTO FILL IN ON/OFF

Sets whether AUTO FILL IN is on or off.
If or, RHYTHM plays automatically adding fill in pattern every 4 bar (without pressing FILLIN switches).

Value	Effects
0	OFF
1	ON

69 AUTO ARPEGGIATOR VOLUME

Sets the volume of AUTO ARPEGGIATOR.

Value	Effects
0	Minimum Volume
|	
63	Maximum Volume

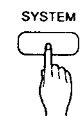
3

Other Settings

1. SYSTEM Setting

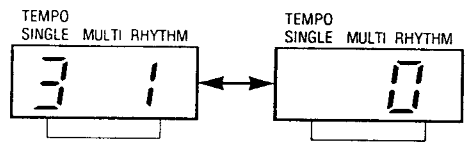
In this SYSTEM mode you can set the values that affect the entire KC10 unit.

To set or change the SYSTEM setting, it is necessary to enter SYSTEM mode.



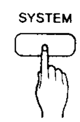
(1) Press the SYSTEM switch to enter the SYSTEM mode.

The LED shows the function/parameter number and its value alternately.

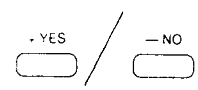


function/parameter No. Value

(2) Press SYSTEM again until the desired function number appears.



(3) Change the parameter's value with +YES and –NO switches. (Repeat (3) and (4) to change all parameters you need.)

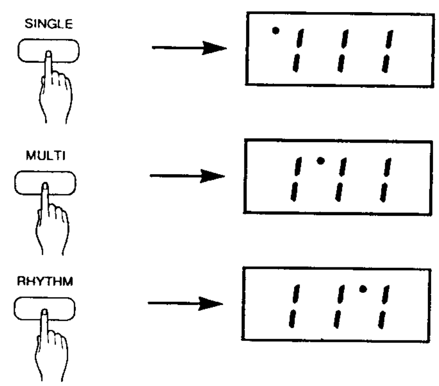


(4) To leave the SYSTEM mode:

(a) Press SINGLE switch
→ returns to SINGLE PLAY mode.

(b) Press MULTI switch
→ returns to MULTI PLAY mode.

(c) Press RHYTHM switch
→ returns to RHYTHM PLAY mode.



3 1 SYSTEM TUNE

Adjusts the KC10's master tuning.

Value	Effects
-10	Semitone Lower
I	
0	Standard Pitch
I	
+10	Semitone Higher

NOTE: *Turning the KC10's power off resets the TUNE value to 0 (standard pitch).*

3 2 SYSTEM TRANSPOSE

Shifts the pitch of all notes up or down in semitone increments.

Value	Effects
-12	Octave Lower
I	
0	Standard Pitch
I	
+12	Octave Higher

3 3 BENDER RANGE

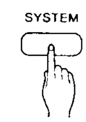
Sets the amount of pitch bend when using PITCH BEND wheel.

Value	Effects
0	No effect
I	
7	Range of 7 semitones

2. MIDI Setting

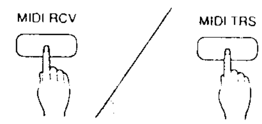
To use the KC10 with other external MIDI equipment, set the KC10's MIDI function as necessary.
Use MIDI RCV (receive) and MIDI TRS (transmit) mode to set these parameters.

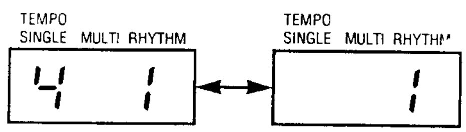
(1) Enter SYSTEM mode. (See p. 42)



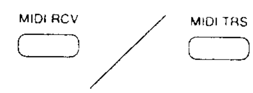
(2) Press MIDI RCV or MIDI TRS switch to enter the MIDI RCV (or TRS) MODE.

The LED shows the function/parameter number and its value alternately.

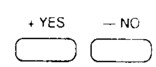




(3) Press MIDI RCV (TRS) again until the desired function number appears. (See the following parameter chart.)

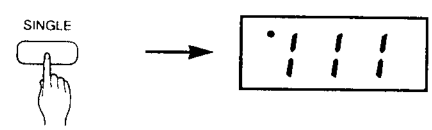


(4) Change the parameter's value with +YES and –NO switches. (repeat (3) and (4) to change all parameters you need.)

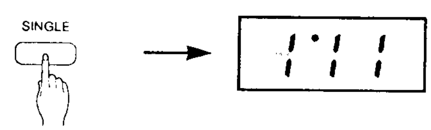


(5) To leave the MIDI RCV (TRS) mode:

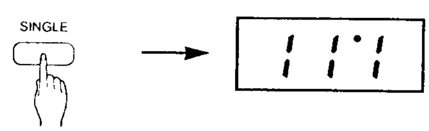
(a) Press SINGLE switch
→ returns to SINGLE PLAY mode.



(b) Press MULTI switch
→ returns to MULTI PLAY mode.



(c) Press RHYTHM switch
→ returns to RHYTHM PLAY mode.



	Function No./Name	Value Range	Ref. p.
MIDI RCV Parameters	4 1 RECEIVE CHANNEL	1 - 9, 11 - 16	p. 45
	4 2 OMNI ON/OFF	0 or 1	p. 45
	4 3 RECEIVE PROGRAM CHANGE	0 / 1 / 2	p. 46 - 47
	4 4 RECEIVE PITCH BEND	0 or 1	p. 48
	4 5 RECEIVE MODULATION	0 or 1	p. 48
	4 6 RECEIVE VELOCITY	0 or 1	p. 48
	4 7 RECEIVE EXCLUSIVE	0 or 1	p. 48
MIDI TRS Parameters	5 1 TRANSMIT CHANNEL	1 - 16	p. 49
	5 2 TRANSMIT PROGRAM CHANGE	0 or 1	p. 49
	5 3 TRANSMIT PITCH BEND	0 or 1	p. 49
	5 4 TRANSMIT MODULATION	0 or 1	p. 49
	5 5 TRANSMIT HOLD	0 or 1	p. 50
	5 6 ONE PATCH DATA DUMP (SINGLE/MULTI)	—	p. 50
	5 7 ALL SINGLE DATA DUMP	—	p. 51
	5 8 ALL MULTI DATA DUMP	—	p. 51
	5 9 DRUM DATA DUMP	—	p. 52

MIDI RCV Parameters

4 1 RECEIVE CHANNEL

Sets the MIDI channel(1-16) on which the KC10 receives MIDI data from external equipment.

> **NOTE:** *In this function you cannot set the value 10, because the channel 10 is fixed for DRUM SECTION. The SECTIONs in a MULTI patch receives MIDI data on the channel set in MULTI edit. (See p.33)*

Value	Effects
1	Channel 1
|	
9	Channel 9
11	Channel 11
|	
16	Channel 16

4 2 OMNI ON/OFF

Selects OMNI (See p.17) on or off.
If OMNI is on, data received on any channel will be received and played in SINGLE mode.

> **NOTE:** *Independently from this OMNI setting, the DRUM SECTION sound will be always played when receiving MIDI data on channel 10.*

Value	Effects
0	OFF
1	ON

4 3 RECEIVE PROGRAM CHANGE

Value	Effects
0	OFF
1	NORM
2	SECT

Selects whether a PROGRAM CHANGE is to be recognized.

The correspondance between KC10's SINGLE/MULTI patch numbers and PROGRAM CHANGE numbers are as the chart shows:

OFF: All data will be ignored.
NORM: Switches between SINGLE patches (0 to 95) and MULTI patches (96 to 111).
SECT: Remains in MULTI mode and switches between SINGLE patches within the 4 MULTI patch SECTIONs which have matching MIDI channels.

		1	2	3	4	5	6	7	8
SINGLE (preset)	11	0	1	2	3	4	5	6	7
	12	8	9	10	11	12	13	14	15
	13	16	17	18	19	20	21	22	23
	14	24	25	26	27	28	29	30	31
	15	32	33	34	35	36	37	38	39
	16	40	41	42	43	44	45	46	47
	17	48	49	50	51	52	53	54	55
	18	56	57	58	59	60	61	62	63
SINGLE (user)	21	64	65	66	67	68	69	70	71
	22	72	73	74	75	76	77	78	79
	23	80	81	82	83	84	85	86	87
	24	88	89	90	91	92	93	94	95
MULTI	11	96	97	98	99	100	101	102	103
	12	104	105	106	107	108	109	110	111

When you play a MULTI patch with a sequencer or computer, setting "2"(SECT) allows you to change the SECTION's SINGLE assignment automatically while playing a song.

(Example)
If you want to change the SECTION 4(MIDI RECEIVE CHANNEL: 4) from 111 "STRING VOICE" to 123 "LOW PIANO" ....

SECTION 1	SECTION 2	SECTION 3	SECTION 4
BASS	E. PIANO	BRASS	STRING VOICE
MIDI CH : 1	MIDI CH : 2	MIDI CH : 3	MIDI CH : 4

↓

Send PROGRAM CHANGE number "10" from a sequencer/computer according to MIDI transmit channel 4.

↓

SECTION 1	SECTION 2	SECTION 3	SECTION 4
BASS	E. PIANO	BRASS	LOW PIANO

> ***NOTE:*** *When KC10 receives a PROGRAM CHANGE message according to MIDI channel 10, it always switches between RHYTHM patterns 111 – 166 (under the correspondance shown in the below chart) unrelated to this 4 3 function.*

	1	2	3	4	5	6
11	0	1	2	3	4	5
12	6	7	8	9	10	11
13	12	13	14	15	16	17
14	18	19	20	21	22	23
15	24	25	26	27	28	29
16	30	31	32	33	34	35

44 RECEIVE PITCH BEND

Selects whether PITCH BEND data is to be recognized.

Value	Effects
0	OFF
1	ON

45 RECEIVE MODULATION

Selects whether MODULATION data is to be recognized.

Value	Effects
0	OFF
1	ON

46 RECEIVE VELOCITY

Selects whether VELOCITY data is to be recognized.

Value	Effects
0	OFF
1	ON

47 RECEIVE EXCLUSIVE

Selects whether EXCLUSIVE data is to be recognized.

Value	Effects
0	OFF
1	ON

MIDI TRS Parameters

5 1 TRANSMIT CHANNEL

Sets the MIDI channel (1-16) on which the KC10 transmits MIDI data.

Value	Effects
1	Channel 1
|	
16	Channel 16

5 2 TRANSMIT PROGRAM CHANGE

Selects whether a PROGRAM CHANGE data is to be transmitted.

NOTE: *When selecting on, KC10 can transmit PROGRAM CHANGE data to connected external equipment, by selecting a SINGLE or MULTI patch from the front panel.* *(See p. 10 or 11)*

Value	Effects
0	OFF
1	ON

5 3 TRANSMIT PITCH BEND

Selects whether PITCH BEND data is to be transmitted.

Value	Effects
0	OFF
1	ON

5 4 TRANSMIT MODULATION

Selects whether MODULATION data is to be transmitted.

Value	Effects
0	OFF
1	ON

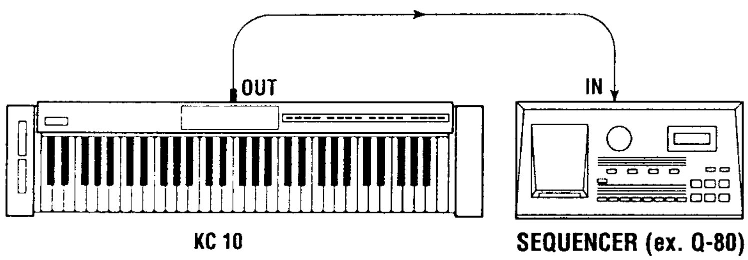
5 5 TRANSMIT HOLD

Selects whether HOLD data is to be transmitted.

Value	Effects
0	OFF
1	ON

DATA DUMP

The KC10 can transmit/receive its SINGLE/MULTI patch data and DRUM SECTION data to/from another external MIDI device. If you use a MIDI sequencer (ex. KAWAI Q-80) as a MIDI data recorder, you can store your original patch data on it with the following "DATA DUMP" procedure.



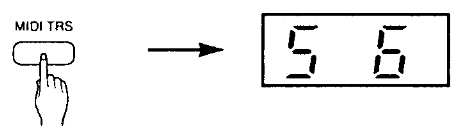
5 6 ONE PATCH DATA DUMP (SINGLE/MULTI)

Transmits the data of the one patch currently selected.

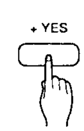
Procedure

(1) Select a SINGLE or MULTI patch to be transmitted (in SINGLE/MULTI PLAY mode – See p. 10 / 11)

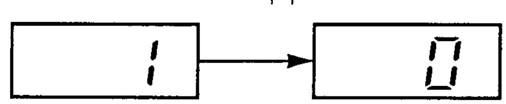
(2) Enter the SYSTEM mode, and call the function <5 6> by pressing 6 switch several times.



(3) Press +YES switch.



The LED indicates the value 1 during transmitting, and shows 0 after it.

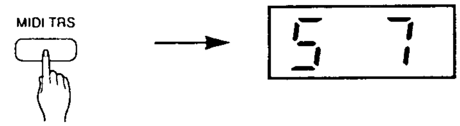


5 7 ALL SINGLE DATA DUMP

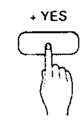
Transmits the data of 32 user SINGLE patches at once.

Procedure

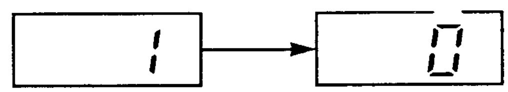
(1) Enter SYSTEM mode, and call the function <5 7> by pressing 6 switch repeatedly.



(2) Press +YES switch.



The LED indicates the value 1 during transmitting, and shows 0 after it.

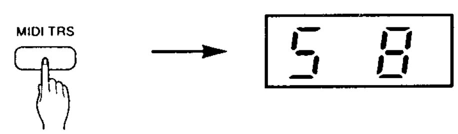


5 8 ALL MULTI DATA DUMP

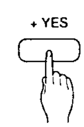
Transmits the data of 16 MULTI patches at once.

Procedure

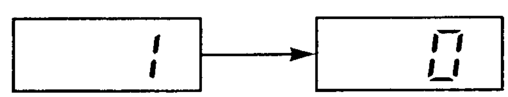
(1) Enter SYSTEM mode, and call the function <5 8> by pressing 6 switch several times.



(2) Press +YES switch.



The LED indicates the value 1 during transmitting, and shows 0 after it.

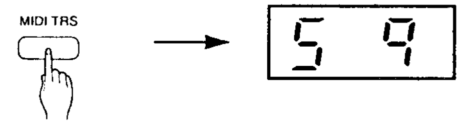


5 9 DRUM DATA DUMP

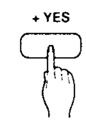
Transmits the data of DRUM SECTION key assignment..

Procedure

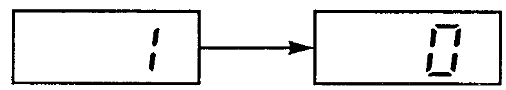
(1) Enter SYSTEM mode, and call the function <5 9> by pressing 6 switch repeatedly.



(2) Press +YES switch.



The LED indicates the value 1 during transmitting, and shows 0 after it.



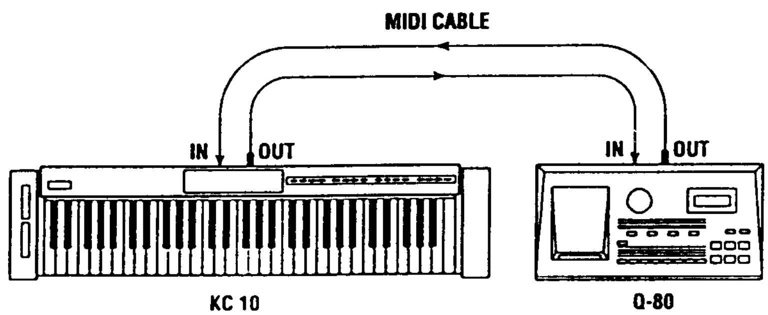
3. Playing Using A Sequencer/Computer

With the MULTI mode, the KC10 can function as a synthesizer and drum sound source with up to 4 (5 using DRUM SECTION) parts. This means that an extremely simple setup such as KC10 and a MIDI sequencer (ex. Kawai Q-80) or computer can produce an extensive range of sounds.

Let's use the procedure shown below to actually connect a MIDI sequencer for performance.

A. MIDI Sequencer Connection

In this example, a Kawai Q-80 is used as a sequencer. Connect it to the KC10 as shown in the illustration.



NOTE: Set your sequencer to ECHO THRU to hear sound from the KC10 while playing the keyboard.

B. MULTI Setting

Decide what SECTIONs will be played, and what tones and MIDI channels they will use.

Here we will use the MULTI patch No. 128 "MANUAL" which is preset.

SECTION 1	SECTION 2	SECTION 3	SECTION 4
BASS	E.PIANO	BRASS	STRINGS
MIDI CH : 1	MIDI CH : 2	MIDI CH : 3	MIDI CH : 4

NOTE: Set the "HAND PERCUSSION ON/OFF" (See p. 37) to OFF (0).

C. Recording

(1) Set the KC10's MIDI TRANSMIT channel " *1*". (See p. 49)

(2) Play the KC10's keyboard, and then you will hear the BASS sound.

(3) Change the TRS channel to "2" – you can play the E.PIANO sound.
And after change to "3" – you can play the BRASS sound.
And after change to "4" – you can play the STRINGS sound.
And after change to " 10" – you can play the sound of DRUM SECTION.

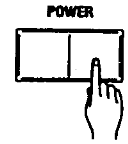
(4) Start the recording to the sequencer with changing MIDI TRS channel and sequencer's recording tracks.

NOTE: *When recording, you should be sure not to use more notes simultaneously than the KC10's max polyphony (MULTI patch: 10, DRUM SECTION: 4).*

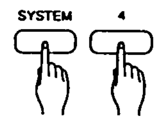
4. RESET Operation

If you want to recall the factory-preset SINGLE/MULTI patch data, use the following RESET procedure.

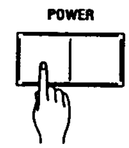
(1) Turn the KC10's power off.



(2) Hold down the SYSTEM switch and 4 switch.



(3) Turn the power on.



This operation recalls the factory-preset setting of:

- 32 user SINGLE patch data
- 16 MULTI patch data
- All RHYTHM parameters
- All SYSTEM parameters (including MIDI TRS & RCV)

NOTE:	*If you want to preserve your original patch data, write all the parameter values down on "SINGLE/MULTI parameter chart" (p.59), or else store the data onto your sequencer/computer using the DATA DUMP operation (See p. 50 ~ 52).*

5. TROUBLESHOOTING

Since the KC10 is equipped with a wide variety of functions, depending on the settings, it may not operated as expected. Also, sound may not be output due to connected amplifiers or other equipment. This chart explains troubleshooting for these types of problems.

PROBLEM	POSSIBLE CASE	PAGE
No Sound	Is the VOLUME too low?	p. 7
	Adjust the volume on the KC10 or any connected amplifiers or other equipment.	p. 8
	Can sound be heard through headphone when connected? If sound is heard, the problem cause may be with connected equipment or cords. Check connections.	p. 8
	(When in the SINGLE or MULTI PLAY mode) Is the SINGLE's level or SECTION's volume too low?	p. 24 / 34
	(When in the MULTI PLAY mode) Is the SECTION PLAY mode set for OFF(0)/MIDI(3)?	p. 33
Sound is distorted	Is the connection to the amplifier's IN secure?	p. 8
Pitch is out of tune	Are TRANSPOSE and TUNE set correctly?	p. 43
	If the pitch of particular patch is out of tune, check the parameter setting for that patch.	p. 33 / 34
No chord produced	Is the SOLO ON/OFF set ON?	p. 25
MIDI data cannot be transmitted or received correctly	Are the MIDI functions for the transmitting and receiving equipment set correctly?	p. 44 - 52

APPENDICES

1. PRESET SOUND CHART

SINGLE – 64 preset patches

	1	2	3	4	5	6	7	8
11X	STRING VOICE	SYN BRASS	PIANO 1	CONDENCER	NORM VOICE	SYN BASS	E. ORGAN	W. BASS/PIANO
12X	NORM STRING	AC BRASS	LOW PIANO	BELLS	FLUTE	CONTRABASS	Bee 52	STRINGS/BRASS
13X	PIANO STRING	SQR LEAD	BRIGHT PIANO	RHODOS	ALTO	FRETLESS	CHURCH ORGAN	E. BASS/E. PIANO
14X	FAT STRINGS	OCT BRASS	SPINETT	SPIELUHR	RECORDER	NYLON	HARPO	SYN BASS/STRINGS
15X	SPACE STRINGS	SAW LEAD 1	WURL EP	WATER BELL	OBOE	GUITAR/BASS	SITAR	E. BASS/CLAVI
16X	FAST STRINGS	LIPS	PIANO 2	MALLET	TENOR SAX	SEQ BASS	BANJO	SYN BASS/VOICE
17X	OCT STRINGS	BRASS VOICE	CLAVI	WATER DANCE	TIN WHISTLE	SHARP BASS	HARMONICA	JIVE CHIMES
18X	WATER DREAM	BRASS STRINGS	STEELY GTR	PALLAS	CHA CHA	PULL BASS	WARM BASS	LUCY

SINGLE – 32 user patches (default)

	1	2	3	4	5	6	7	8
21X	HITER	RHODOBRASS	NAIL BOX	DC EP	11 cc	W. BASS 1	TIN DRUM	POP LEAD
22X	ALT STRINGS	SAW LEAD 2	PIANO 3	XYLOPHONE	PAN FLUTE	SLAP BASS	FLAGIOLET	SYN PAD 1
23X	VIOLIN	SAW LEAD 3	KNOCK PIANO	BELL	SPACE VOX	MUTE RELEASE	SEQ PLUCK 1	ACCORDION
24X	STRINGS>VOX	SHARP LEAD	PIANO 4	STEELDRUM	CLARINET	FUZZ GT	SEQ PLUCK 2	SYN PAD 2

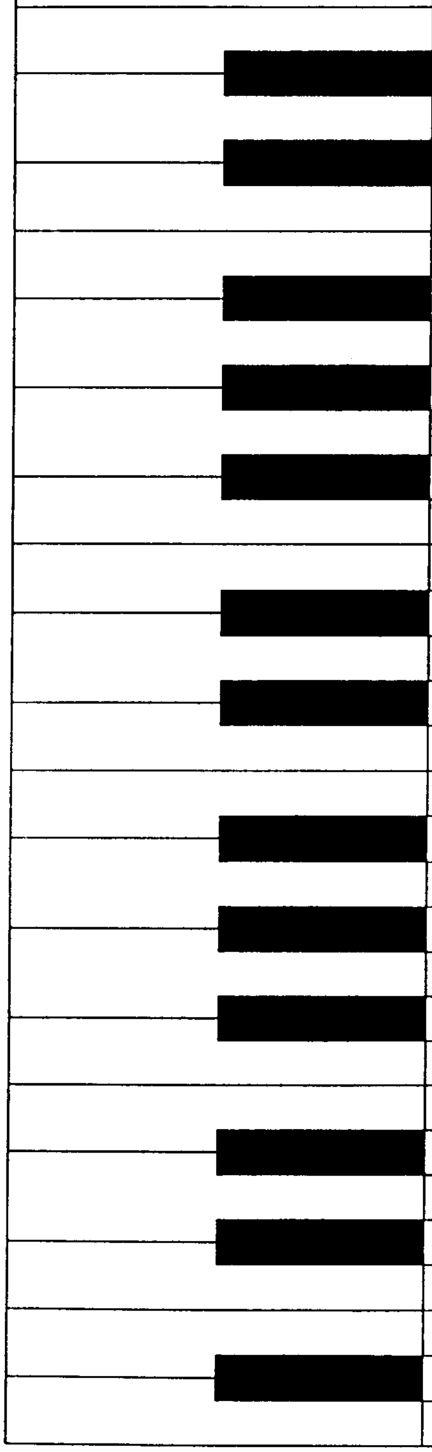
MULTI patches (default)

	1	2	3	4	5	6	7	8
11X	DETUNED EP	PIANO DETUNE	PIANO/STRINGS	BRASS LAYER	E. PIANOSTR	BELLVOICE	MIDI 1	MIDI 2
12X	SPLIT 1	SPLIT 2	SPLIT 3	SPLIT 4	SPLIT 5	SPLIT 6	SPLIT 7	MANUAL

RHYTHM patterns

	1	2	3	4	5	6
11X	METAL	DANCE	BLUES	BOSSANOVA	LIGHT SAMBA	POP ROCK
12X	JAZZ	50's ROCK	SLAP FUNK	SLOW ROCK	JAZZ WALTZ	POPS
13X	EURO FUNK	LATIN	ROCK HOUSE	HOUSE 1	HOUSE 2	MID ROCK 1
14X	HEAVY ROCK	SHUFFLE ROCK	MEDIUM ROCK 1	J.B SOUL	TECHNO FUNK	OLD FUNK
15X	PY RHYTHM	REGGAE	MID ROCK 2	JACKSON BEAT	POP DANCE	SHUFFLE ROCK 2
16X	FUSION	ROCK 1	ROCK 2	MODERN ART	MEDIUM ROCK 2	AFRO

2. DRUM SECTION - Key Assignment



KEY NAME	NOTE NO.	INSTRUMENT
C1	36	Bass Drum
C#1	37	Rimshot
D1	38	Snare Drum 1
D#1	39	Hand Clap
E1	40	Snare Drum 2
F1	41	Low Tom
F#1	42	Closed High Hat 1
G1	43	Low Tom
G#1	44	Closed High Hat 2
A1	45	Mid Tom
A#1	46	Open High Hat
B1	47	Mid Tom
C2	48	High Tom
C#2	49	Side Cymbal 1
D2	50	High Tom
D#2	51	Top Cymbal
E2	52	Side Cymbal 2
F2	53	African Bell
F#2	54	Tambourine
G2	55	Splash
G#2	56	High Cowbel
A2	57	Side Cymbal 3
A#2	58	Low Cowbel
B2	59	Agogo
C3	60	High Bongo
C#3	61	Low Bongo
D3	62	Shaker
D#3	63	High Conga
E3	64	Low Conga
F3	65	High Timbale
F#3	66	Low Timbale
G3	67	Claves

3. SINGLE/MULTI Edit Parameters (Blank Chart)

SINGLE patch

	function name	value
EDIT	91 VOLUME	
	92 KEY FIX	
	93 FIXED KEY NO.	
	94 CHORUS ON/OFF	
WAVE	101 WAVE SELECT	
	102 SOLO ON/OFF	
FREQ	111 VIBRATO SPEED	
	112 VIBRATO DEPTH	
	113 VIBRATO SHAPE	
	114 AUTO BEND TIME	
	115 AUTO BEND DEPTH	
ENV1	121 LEVEL	
	122 ATTACK TIME	
	123 DECAY TIME	
	124 SUSTAIN LEVEL	
	125 RELEASE TIME	
	126 KS ENVELOPE LEVEL	
	127 VELOCITY TABLE	
ENV2	131 LEVEL	
	132 ATTACK TIME	
	133 DECAY TIME	
	134 SUSTAIN LEVEL	
	135 RELEASE TIME	
	136 KS ENVELOPE LEVEL	
	137 VELOCITY CURVE	

MULTI patch

	function name	value
SECTION 1	210 SECTION PLAY	
	211 SINGLE ASSIGN	
	212 RECEIVE CHANNEL	
	213 LEVEL	
	214 TUNE	
	215 TRANSPOSE	
	216 ZONE LO	
	217 ZONE HI	
SECTION 2	220 SECTION PLAY	
	221 SINGLE ASSIGN	
	222 RECEIVE CHANNEL	
	223 LEVEL	
	224 TUNE	
	225 TRANSPOSE	
	226 ZONE LO	
	227 ZONE HI	
SECTION 3	230 SECTION PLAY	
	231 SINGLE ASSIGN	
	232 RECEIVE CHANNEL	
	233 LEVEL	
	234 TUNE	
	235 TRANSPOSE	
	236 ZONE LO	
	237 ZONE HI	
SECTION 4	240 SECTION PLAY	
	241 SINGLE ASSIGN	
	242 RECEIVE CHANNEL	
	243 LEVEL	
	244 TUNE	
	245 TRANSPOSE	
	246 ZONE LO	
	247 ZONE HI	

4. MIDI DATA FORMAT

1. TRANSMITTED DATA

1st	2nd	3rd	Description	
1001nnnn	0kkkkkkk	0vvvvvvv	Note on	kkkkkkk=24~108 vvvvvvv=1~127 0=off
1011nnnn	00000001	0vvvvvvv	Modulation	vvvvvvv=0~127
1011nnnn	00000110	00000vvv	Data Entry	vvv=0~7
1011nnnn	01000000	0vvvvvvv	Hold 1 sw	vvvvvvv=0 off vvvvvvv=127 on
1011nnnn	01100100	00000000	RPN LSB	Bender Range
1011nnnn	01100101	00000000	RPN MSB	Bender Range
1100nnnn	0ppppppp	———	Program Change	ppppppp=0~95 Single "111" ~ "248" ppppppp=96~111 Multi "111" ~ "128"
1110nnnn	00000000	0vvvvvvv	Pitch Bender	vvvvvvvb=0~127
1011nnnn	01111011	00000000	All Notes off	
11111110	———	———	Active Sensing	
11111010	———	———	Start	
11111100	———	———	Stop	
11111000	———	———	Clock	

nnnn Channel no.
RPN Registered Parameter Number

2. RECOGNIZED RECEIVED DATA

1st	2nd	3rd	Description	
1000nnnn	0kkkkkkk	0vvvvvvv	Note off	kkkkkkk=12~120 vvvvvvv=ignore
1001nnnn	0kkkkkkk	0vvvvvvv	Note on/off	kkkkkkk=12~120 vvvvvvv=1~127 Note on vvvvvvv=0 off
1011nnnn	00000001	0vvvvvvv	Modulation	vvvvvvv=0~127
1011nnnn	00000110	00000vvv	Data Entry	vvv=0~7 (over 8 ignored)
1011nnnn	00000111	0vvvvvvv	Volume	vvvvvvv=0~127
1011nnnn	01000000	0vvvvvvv	Hold 1 sw	vvvvvvv=0~63 off vvvvvvv=64~127on
1011nnnn	01100100	00000000	RPN LSB	Bender Range lo
1011nnnn	01100101	00000000	RPN MSB	Bender Range hi
1100nnnn	0ppppppp	———	Program Change	ppppppp=0~95 Single "111" ~ "248" ppppppp=96~111 Multi "111" ~ "128" ppppppp=112~127 ignored
1110nnnn	00000000	0vvvvvvv	Pitch Bender	vvvvvvv=0~127
1011nnnn	01111011	00000000	All Notes off	
1011nnnn	01111100	00000000	Omni off	
1011nnnn	01111101	00000000	Omni on	
11111110	———	———	Active Sensing	

nnnn Channel no.
RPN Registered Parameter Number

3. EXCLUSIVE DATA FORMAT

KAWAI FORMAT
Followings in the exclusive data format of the KC10, and is based on the "KAWAI MIDI EXCLUSIVE FORMAT".

KL1/KL1m MIDI EXCLUSIVE FORMAT

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	0fffffff		
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub1	0sssssss		Sub command1
Sub2	0sssssss		Sub command2
data	0xxxxxxx		
data	0xxxxxxx		
·			
·			
·			
data	0xxxxxxx		
data	0xxxxxxx		
EOX	11110111	F7H	

The Exclusive data is received only when the system MIDI RCV parameter 4-7 (exclusive on/off) =1.

Function no., Sub1 and Sub2 are listed in 9. EXCLUSIVE FUNCTION TABLE.

4. EXCLUSIVE TRANSMITTED DATA

4-1. ONE SINGLE/MULTI DATA DUMP

This message is transmitted from KC10 when system TRS parameter (5-6) is set, or after receiving the ONE SINGLE/MULTI DATA REQ.
See SINGLE/MULTI DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100000	20H	One patch data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	0xxxxxxx		64~95 SINGLE "211" ~ "248" 96~111 MULTI "111" ~ "128"
data	0xxxxxxx		patch data s0/m0
data	0xxxxxxx		patch data s1/m1
data	0xxxxxxx		patch data s2/m2
·			
·			
·			
data	0xxxxxxx	patch data s21/m37	
data	0xxxxxxx	patch data s22/m38	
data	0xxxxxxx	patch data s23/m39	
EOX	11110111	F7H	

4-2. ONE DRUM DATA DUMP

This message is transmitted from KC10 when system TRS parameter (5-9) is set, or after receiving the ONE DRUM DATA REQ.
See DRUM DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100000	20H	One patch data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000001	01H	drum
Sub status 2	00000000	00H	
data	0xxxxxxx		patch data d0
data	0xxxxxxx		patch data d1
data	0xxxxxxx		patch data d2
·			
·			
·			
data	0xxxxxxx		patch data d62
data	0xxxxxxx		patch data d63
data	0xxxxxxx		patch data d64
EOX	11110111	F7H	

4-3. BLOCK SINGLE DATA DUMP

This message is transmitted from KC10 when system TRS parameter (5-7) is set, or after receiving the ALL SINGLE DATA REQ.

See SINGLE DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	21H	block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000001	00H	single/multi
Sub status 2	01000000	40H	all singles
data	0xxxxxxx		"211" s0 data
data	0xxxxxxx		"211" s1 data
data	0xxxxxxx		"211" s2 data
data	0xxxxxxx		"211" s3 data
⋮			
data	0xxxxxxx		"211" s20 data
data	0xxxxxxx		"211" s21 data
data	0xxxxxxx		"211" s22 data
data	0xxxxxxx		"211" s23 data
data	0xxxxxxx		"212" s0 data
data	0xxxxxxx		"212" s1 data
data	0xxxxxxx		"212" s2 data
data	0xxxxxxx		"212" s3 data
⋮			
data	0xxxxxxx		"212" s20 data
data	0xxxxxxx		"212" s21 data
data	0xxxxxxx		"212" s22 data
data	0xxxxxxx		"212" s23 data
"213" patch data			
"214" patch data			
"215" patch data			
⋮			
"246" patch data			
"247" patch data			
data	0xxxxxxx		"248" s0 data
data	0xxxxxxx		"248" s1 data
data	0xxxxxxx		"248" s2 data
data	0xxxxxxx		"248" s3 data
⋮			
data	0xxxxxxx		"248" s20 data
data	0xxxxxxx		"248" s21 data
data	0xxxxxxx		"248" s22 data
data	0xxxxxxx		"248" s23 data
EOX	11110111	F7H	

4-4. BLOCK MULTI DATA DUMP

This message is transmitted from KC10 when system TRS parameter (5-8) is set, or after receiving the ALL MULTI DATA REQ.

See MULTI DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	21H	block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	single/multi
Sub status 2	01100000	60H	all multi
data	0xxxxxxx		"111" m0 data
data	0xxxxxxx		"111" m1 data
data	0xxxxxxx		"111" m2 data
data	0xxxxxxx		"111" m3 data
⋮			
data	0xxxxxxx		"111" m36 data
data	0xxxxxxx		"111" m37 data
data	0xxxxxxx		"111" m38 data
data	0xxxxxxx		"111" m39 data
data	0xxxxxxx		"112" m0 data
data	0xxxxxxx		"112" m1 data
data	0xxxxxxx		"112" m2 data
data	0xxxxxxx		"112" m2 data
⋮			
data	0xxxxxxx		"112" m36 data
data	0xxxxxxx		"112" m37 data
data	0xxxxxxx		"112" m38 data
data	0xxxxxxx		"112" m39 data
"113" patch data			
"114" patch data			
"115" patch data			
⋮			
"126" patch data			
"127" patch data			
data	0xxxxxxx		"128" m0 data
data	0xxxxxxx		"128" m1 data
data	0xxxxxxx		"128" m2 data
data	0xxxxxxx		"128" m3 data
⋮			
data	0xxxxxxx		"128" m36 data
data	0xxxxxxx		"128" m37 data
data	0xxxxxxx		"128" m38 data
data	0xxxxxxx		"128" m39 data
EOX	11110111	F7H	

4-5. ALL PATCH DATA DUMP

This message is transmitted when "ALL PATCH DATA REQUEST" is received.
KC10 transmits all singles at first and all multi and drum.

See MULTI DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	22H	All block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	00000000	00H	
data	0xxxxxxx		"211" s0 data
data	0xxxxxxx		"211" s1 data
data	0xxxxxxx		"211" s2 data
data	0xxxxxxx		"211" s3 data
⋮			
data	0xxxxxxx		"248" s20 data
data	0xxxxxxx		"248" s21 data
data	0xxxxxxx		"248" s22 data
data	0xxxxxxx		"248" s23 data
data	0xxxxxxx		"111" M0 data
data	0xxxxxxx		"111" M1 data
data	0xxxxxxx		"111" M2 data
data	0xxxxxxx		"111" M3 data
⋮			
data	0xxxxxxx		"128" M36 data
data	0xxxxxxx		"128" M37 data
data	0xxxxxxx		"128" M38 data
data	0xxxxxxx		"128" M39 data
data	0xxxxxxx		DRUM d0 data
data	0xxxxxxx		DRUM d1 data
data	0xxxxxxx		DRUM d2 data
data	0xxxxxxx		DRUM d3 data
⋮			
data	0xxxxxxx		DRUM d61 data
data	0xxxxxxx		DRUM d62 data
data	0xxxxxxx		DRUM d63 data
data	0xxxxxxx		DRUM d64 data
EOX	11110111	F7H	

5. EXCLUSIVE RECOGNIZED RECEIVED DATA

5-1. ONE SINGLE/MULTI DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00000000	00H	One patch data request
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	0bbbbbbb		64~95 single "211" ~ "248" 96~111 multi "111" ~ "128"
EOX	11110111	F7H	

5-2. ONE DRUM DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00000000	00H	One patch data request
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000001	01H	drum
Sub status 2	00000000	00H	
EOX	11110111	F7H	

5-3. BLOCK SINGLE/MULTI DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00000001	01H	block patch data request
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	0xx00000	40H	single 60H multi
EOX	11110111	F7H	

5-4. ALL DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00000010	02H	all block data request
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	00000000	00H	
EOX	11110111	F7H	

5-5. ONE SINGLE/MULTI DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100000	20H	One patch data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	0xxxxxxx		64~95 SINGLE "211" ~ "248" 96~111 MULTI "111" ~ "128"
data	0xxxxxxx		patch data s0/m0
data	0xxxxxxx		patch data s1/m1
data	0xxxxxxx		patch data s2/m2
⋮			
data	0xxxxxxx		patch data s21/m37
data	0xxxxxxx		patch data s22/m38
data	0xxxxxxx		patch data s23/m39
EOX	11110111	F7H	

5-6. ONE DRUM DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100000	20H	One patch data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000001	01H	drum
Sub status 2	00000000	00H	
data	0xxxxxxx		patch data d0
data	0xxxxxxx		patch data d1
data	0xxxxxxx		patch data d2
⋮			
data	0xxxxxxx		patch data d61
data	0xxxxxxx		patch data d62
data	0xxxxxxx		patch data d63
data	0xxxxxxx		patch data d64
EOX	11110111	F7H	

5-7. BLOCK SINGLE DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	21H	block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	01000000	40H	all single
data	0xxxxxxx		"211" s0 data
data	0xxxxxxx		"211" s1 data
data	0xxxxxxx		"211" s2 data
data	0xxxxxxx		"211" s3 data
⋮			
data	0xxxxxxx		"211" s20 data
data	0xxxxxxx		"211" s21 data
data	0xxxxxxx		"211" s22 data
data	0xxxxxxx		"211" s23 data
data	0xxxxxxx		"212" s0 data
data	0xxxxxxx		"212" s1 data
data	0xxxxxxx		"212" s2 data
data	0xxxxxxx		"212" s3 data
⋮			
data	0xxxxxxx		"212" s20 data
data	0xxxxxxx		"212" s21 data
data	0xxxxxxx		"212" s22 data
data	0xxxxxxx		"212" s23 data
"213" patch data			
"214" patch data			
"215" patch data			
⋮			
"246" patch data			
"247" patch data			
data	0xxxxxxx		"248" s0 data
data	0xxxxxxx		"248" s1 data
data	0xxxxxxx		"248" s2 data
data	0xxxxxxx		"248" s3 data
⋮			
data	0xxxxxxx		"248" s20 data
data	0xxxxxxx		"248" s21 data
data	0xxxxxxx		"248" s22 data
data	0xxxxxxx		"248" s23 data
EOX	11110111	F7H	

5-8. BLOCK MULTI DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	21H	block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	01100000	60H	all multi
data	0xxxxxxx		"111" m0 data
data	0xxxxxxx		"111" m1 data
data	0xxxxxxx		"111" m2 data
data	0xxxxxxx		"111" m3 data
⋮			
data	0xxxxxxx		"111" m36 data
data	0xxxxxxx		"111" m37 data
data	0xxxxxxx		"111" m38 data
data	0xxxxxxx		"111" m39 data
data	0xxxxxxx		"112" m0 data
data	0xxxxxxx		"112" m1 data
data	0xxxxxxx		"112" m2 data
data	0xxxxxxx		"112" m2 data
⋮			
data	0xxxxxxx		"112" m36 data
data	0xxxxxxx		"112" m37 data
data	0xxxxxxx		"112" m38 data
data	0xxxxxxx		"112" m39 data
"113" patch data			
"114" patch data			
"115" patch data			
⋮			
"126" patch data			
"127" patch data			
data	0xxxxxxx		"128" m0 data
data	0xxxxxxx		"128" m1 data
data	0xxxxxxx		"128" m2 data
data	0xxxxxxx		"128" m3 data
⋮			
data	0xxxxxxx		"128" m36 data
data	0xxxxxxx		"128" m37 data
data	0xxxxxxx		"128" m38 data
data	0xxxxxxx		"128" m39 data
EOX	11110111	F7H	

5-9. ALL PATCH DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100010	22H	All block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	00000000	00H	
data	0xxxxxxx		"211" s0 data
data	0xxxxxxx		"211" s1 data
data	0xxxxxxx		"211" s2 data
data	0xxxxxxx		"211" s3 data
	⋮		
data	0xxxxxxx		"248" s20 data
data	0xxxxxxx		"248" s21 data
data	0xxxxxxx		"248" s22 data
data	0xxxxxxx		"248" s23 data
data	0xxxxxxx		"111" M0 data
data	0xxxxxxx		"111" M1 data
data	0xxxxxxx		"111" M2 data
data	0xxxxxxx		"111" M3 data
	⋮		
data	0xxxxxxx		"128" M36 data
data	0xxxxxxx		"128" M37 data
data	0xxxxxxx		"128" M38 data
data	0xxxxxxx		"128" M39 data
data	0xxxxxxx		DRUM d0 data
data	0xxxxxxx		DRUM d1 data
data	0xxxxxxx		DRUM d2 data
data	0xxxxxxx		DRUM d3 data
	⋮		
data	0xxxxxxx		DRUM d61 data
data	0xxxxxxx		DRUM d62 data
data	0xxxxxxx		DRUM d63 data
data	0xxxxxxx		DRUM d64 data
EOX	11110111	F7H	

6. SINGLE DATA LIST

NO.	BYTE	PARAMETER NAME	DESCRIPTION
s00	00nnnnnn	vol	0~63
s01	0nnnnnnn	wave	0~127/1~128
s02	0000000n	solo	1: on/0: off
s03	000nnnnn	vib speed	0~31
s04	000nnnnn	vib dep	0~31
s05	000000nn	vib shape	0~3
s06	000nnnnn	a.bend time	0~31
s07	00nnnnnn	a.bend depth	0~62/0~±31 (0=31)
s08	000nnnnn	dco1 level	0~31
s09	000nnnnn	dco1 attack	0~31
s10	000vvvvv	dco1 decay	0~31
s11	000eeeee	dco1 sustain	0~31
s12	000sssss	dco1 relese	0~31
s13	000sssss	dco1 ks depth	0~30/0~±15 (0=15)
s14	000000pp	dco1 velo table	0~3
s15	000lllll	dco2 level	0~31
s16	000aaaaa	dco2 attack	0~31
s17	000ddddd	dco2 decay	0~31
s18	000sssss	dco2 sustain	0~31
s19	000rrrrr	dco2 relese	0~31
s20	000kkkkk	dco2 ks depth	0~30/0~±15 (0=15)
s21	000000pp	dco2 velo table	0~3
s22	0000000a	fix key sw	1: on/0: off
s23	0ddddddd	fix key no.	24~108
s23	0000000a	chorus sw	1: on/0: off

7. MULTI DATA LIST

NO.	BYTE	PARAMETER NAME	DESCRIPTION
<sec1>			
M0	000000nn	assign	0/off, 1/kybd, 2/midi, 3/mix
M1	0nnnnnnn	single	0~95/ "111" ~ "248"
M2	0000nnnn	rcv ch.	0~15/1~16
M3	000nnnnn	tune	0~20/0~±10 (0=10)
M4	000nnnnn	levevl	0~31
M5	000nnnnn	transpose	0~24/0~±12 (0=12)
M6	0nnnnnnn	zone hi	36~96
M7	0nnnnnnn	zone low	36~96
M8	00000000	dummy	0
M9	00000000	dummy	0
<sec2>			
M10	000000nn	assign	0/off, 1/kybd, 2/midi, 3/mix
M11	0nnnnnnn	single	0~95/ "111" ~ "248"
M12	0000nnnn	rcv ch.	0~15/1~16
M13	000nnnnn	tune	0~20/0~±10 (0=10)
M14	000nnnnn	levevl	0~31
M15	000nnnnn	transpose	0~24/0~±12 (0=12)
M16	0nnnnnnn	zone hi	36~96
M17	0nnnnnnn	zone low	36~96
M18	00000000	dummy	0
M19	00000000	dummy	0
<sec3>			
M20	000000nn	assign	0/off, 1/kybd, 2/midi, 3/mix
M21	0nnnnnnn	single	0~95/ "111" ~ "248"
M22	0000nnnn	rcv ch.	0~15/1~16
M23	000nnnnn	tune	0~20/0~±10 (0=10)
M24	000nnnnn	levevl	0~31
M25	000nnnnn	transpose	0~24/0~±12 (0=12)
M26	0nnnnnnn	zone hi	36~96
M27	0nnnnnnn	zone low	36~96
M28	00000000	dummy	0
M29	00000000	dummy	0
<sec4>			
M30	000000nn	assign	0/off, 1/kybd, 2/midi, 3/mix
M31	0nnnnnnn	single	0~95/ "111" ~ "248"
M32	0000nnnn	rcv ch.	0~15/1~16
M33	000nnnnn	tune	0~20/0~±10 (0=10)
M34	000nnnnn	levevl	0~31
M35	000nnnnn	transpose	0~24/0~±12 (0=12)
M36	0nnnnnnn	zone hi	36~96
M37	0nnnnnnn	zone low	36~96
M38	00000000	dummy	0
M39	00000000	dummy	0

8. DRUM DATA LIST

NO.	BYTE	PARAMETER NAME	DESCRIPTION
<COMMON>			
d00	0000cccc	volume	0~31
d01	000vvvvv	C1 drm no.	0~31
d02	000vvvvv	C1 drm level	0~31
d03	000vvvvv	C#1 drm no.	0~31
d04	000vvvvv	C#1 drm level	0~31
d05	000vvvvv	D1 drm no.	0~31
d06	000vvvvv	D1 drm level	0~31
d07	000vvvvv		
d08	000vvvvv		
d09	000vvvvv		
d010	000vvvvv		
	⋮		
d061	000vvvvv	F#3 drm no.	0~31
d062	000vvvvv	F#3 drm level	0~31
d063	000vvvvv	G#3 drm no.	0~31
d064	000vvvvv	G#3 drm level	0~31

9. EXCLUSIVE FUNCTION TABLE

FUNCTION	FUNCTION NO.	SUB CMND 1	SUB CMND 2	DESCRIPTION	TRS	RCU
One Patch Dump Request	0 (00H)	0	64~95	ONE SINGLE DATA REQUEST	X	O
		0	96~111	ONE MULTI DATA REQUEST	X	O
		1	0	ONE DRUM DATA REQUEST	X	O
Block Patch Dump Request	1 (01H)	0	64	ALL SINGLE DATA REQUEST	X	O
		0	96	ALL MULTI DATA REQUEST	X	O
All Patch Dump Request	2 (02H)	0	0	ALL DATA REQUEST	X	O
One Patch Data Dump	32 (02H)	0	64~95	ONE SINGLE DATA DUMP	O	O
		0	96~111	ONE MULTI DATA DUMP	O	O
		1	0	ONE DRUM DATA DUMP	O	O
Block Patch Data Dump	33 (21H)	0	64	ALL SINGLE DATA DUMP	O	O
		0	96	ALL MULTI DATA DUMP	O	O
ALL Patch Data Dump	34 (22H)	0	0	ALL DATA DUMP	O	O

10. PROGRAM NO. CONVERT TABLE

SINGLE PRESET

*	*11**		*12**		*13**		*14**		*15**		*16**		*17**		*18**	
1	0	00H	8	08H	16	10H	24	18H	32	20H	40	28H	48	30H	56	38H
2	1	01H	9	09H	17	11H	25	19H	33	21H	41	29H	49	31H	57	39H
3	2	02H	10	0AH	18	12H	26	1AH	34	22H	42	2AH	50	32H	58	3AH
4	3	03H	11	0BH	19	13H	27	1BH	35	23H	43	2BH	51	33H	59	3BH
5	4	04H	12	0CH	20	14H	28	1CH	36	24H	44	2CH	52	34H	60	3CH
6	5	05H	13	0DH	21	15H	29	1DH	37	25H	45	2DH	53	35H	61	3DH
7	6	06H	14	0EH	22	16H	30	1EH	38	26H	46	2EH	54	36H	62	3EH
8	7	07H	15	0FH	23	17H	31	1FH	39	27H	47	2FH	55	37H	63	3FH

SINGLE USER

*	*21**		*22**		*23**		*24**	
1	64	40H	72	48H	80	50H	88	58H
2	65	41H	73	49H	81	51H	89	59H
3	66	42H	74	4AH	82	52H	90	5AH
4	67	43H	75	4BH	83	53H	91	5BH
5	68	44H	76	4CH	84	54H	92	5CH
6	69	45H	77	4DH	85	55H	93	5DH
7	70	46H	78	4DH	86	56H	94	5EH
8	71	47H	79	4FH	87	57H	95	5FH

MULTI USER

*	*11**		*12**	
1	96	60H	104	68H
2	97	61H	105	69H
3	98	62H	106	6AH
4	99	63H	107	6BH
5	100	64H	108	6CH
6	101	65H	109	6DH
7	102	66H	110	6EH
8	103	67H	111	6FH

5. WAVE LIST

1 PIANO & PIANO 1
2 PIANO & PIANO 2
3 PIANO & PIANO 3
4 PIANO & PIANO 4
5 PIANO & PIANO 5
6 PIANO & PIANO 6
7 PIANO & RIDE
8 PIANO & PIANO E 1
9 PIANO & PIANO E 2
10 PIANO E & PIANO E 1
11 PIANO E & PIANO E 2
12 PIANO E & RIDE
13 BASS E & BASS E
14 BASS E & BASS SYN 1
15 BASS E & BASS SYN 2
16 BASS E & BASS WOOD
17 BASS E & GUITAR A
18 BASS E & RANDOM
19 BASS SYN & BASS SYN
20 BASS SYN & BASS WOOD
21 BASS SYN & GUITAR A
22 BASS SYN & CONGA
23 BASS SYN & SD H
24 BASS WOOD & BASS WOOD 1
25 BASS WOOD & BASS WOOD 2
26 BASS WOOD & GUITAR A
27 GUITAR A & GUITAR A
28 GUITAR A & GUITAR FUZZ
29 GUITAR A & CONGA
30 GUITAR A & SD H
31 GUITAR FUZZ & GUITAR FUZZ
32 STRINGS & STRINGS 1
33 STRINGS & STRINGS 2
34 STRINGS & STRINGS 3
35 STRINGS & STRINGS 4
36 STRINGS & VOICE 1
37 STRINGS & VOICE 2
38 STRINGS & CRASH
39 STRINGS & RIDE
40 STRINGS & RANDOM
41 VOICE & VOICE
42 VOICE & CRASH
43 VOICE & RIDE
44 BRASS AC & BRASS AC
45 BRASS AS & BRASS SYN
46 BRASS AC & PIANO
47 BRASS AC & PIANO E
48 BRASS SYN & PIANO HI
49 BRASS AC & CRASH
50 BRASS AC & RIDE
51 BRASS SYN & BRASS SYN
52 BRASS SYN & PIANO E
53 BRASS SYN & RANDOM
54 FLUTE & FLUTE
55 FLUTE & BASS AC
56 FLUTE & BASS E
57 FLUTE & GUITAR A
58 FLUTE & SD H
59 DC SIN 1 & 2
60 DC SAW 1
61 DC SAW 2
62 DC SAW 3
63 DC SAW 1 & RANDOM
64 DC TRIANGLE
65 DC BASS FRETLESS
66 DC BASS FRETLESS & BASS SLAP
67 DC FLUTE & BASS FRETLESS
68 DC GUITAR A
69 DC GUITAR E
70 DC GUITAR A & GUITAR E
71 DC GUITAR E & GUITAR A
72 DC GUITAR A & GUITAR DIST
73 DC GUITAR E & GUITAR DIST
74 DC HARP
75 DC CLAVI & SQR H
76 DC SQR LEAD
77 DC SQR LEAD & RANDOM
78 DC ORGAN E1
79 DC ORGAN E1 & ORGAN E2
80 DC ORGAN E2
81 DC ORGAN E2 & ORGAN E1
82 DC BIG PIPE & FLUTE
83 DC FLUTE & BIG PIPE
84 DC ORGAN BIG PIPE
85 DC CLAVI
86 DC HARPSICHORD
87 DC HARPSICHORD & RANDOM
88 DC PIANO E
89 DC PIANO E & MALLET
90 DC PIANO E & RANDOM
91 DC BELL
92 DC BELL & RANDOM
93 DC MALLET
94 DC STEEL DRUM
95 DC STEEL DRUM & RANDOM
96 DC VIBE
97 DC VIBE & RANDOM
98 DC VIOLIN
99 DC VIOLIN & RANDOM
100 DC HARMONICA
101 DC HARMONICA & RANDOM
102 DC CLARINET
103 DC OBOE
104 DC OBOE & RANDOM
105 DC SAX 1
106 DC SAX & RANDOM
107 DC SAX 2
108 SE PIANO & COWBELL
109 SE PIANO & PIANO
110 SE STRINGS & BRASS AC
111 SE STRINGS & PIANO
112 SE STRINGS & PIANO E
113 SE STRINGS & PIANO E (L)
114 SE VOICE & BRASS AC
115 SE VOICE & PIANO E
116 SE BASS SYN & BD
117 SE PRG & BANK 10
118 SE DC OMNI
119 DR RIDE & CRASH
120 SP BASS E & CLAVI
121 SP BASS E & PIANO E
122 SP BASS SYN & STRINGS
123 SP BASS SYN & VOICE
124 SP BASS WOOD & PIANO
125 SP STRINGS & BRASS AC
126 SP VOICE & BRASS AC
127 SP VOICE & BRASS SYN
128 10 SPLIT REV DRUM

INDEX

Synthesizer
Model: KC10

MIDI Implementation Chart

Date: Jun. 1990
Version: 1.0

Function		Transmitted	Received (Keyboard)	Received (Drum section)	Remarks
Basic Channel	: Default : Changed	1 – 16 1 – 16	1 – 9, 11 – 16 1 – 9, 11 – 16	10 X	Memorized
Mode	: Default : Message : Altered	3 X ***	1, 3 OMNI ON/OFF X	3 X X	
Note Number	 : True Voice	24 – 108 ***	12 – 120 12 – 120	36 – 67 36 – 67	
Velocity	: Note ON : Note OFF	*1 X	*1 X	○ X	
After Touch	: Key's : Ch's	X X	X X	X X	
Pitch Bend		*1	*1	X	
Control Change	1 6 7 64 100, 101	*1 *1 X *1 *2	*1 *1 ○ *1 *2	X X ○ X X	Modulation Data Entry Volume Hold 1 RPN LSB, MSB
Program Change	 : True No.	*1 0 – 111 ***	*1 0 – 111	*1 0 – 35	
Exclusive		*1	*1	*1	
System Common	: Song Pos : Song Sel : Tune	X X X	X X X	X X X	
System Real Time	: Clock : Commands	○ X	○ X	X X	
Aux Messages	: Local ON/OFF : All Notes OFF : Active Sense : Reset	X ○ (123) ○ X	X ○ (123 – 127) ○ X	X X X X	
Notes		*1 = Can be set ○ or X. *2 = RPN#1: Only recognizes Pitch Bend Sensitivity.			

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO

○ : Y
X : N

SPECIFICATIONS

■ KEYBOARD :	61 keys (with velocity)
■ WAVEFORMS :	16bit PCM + 16bit DC (Digital Cyclic)
■ POLYPHONY :	10 (SINGLE/MULTI) + 4 (DRUM SECTION)
■ PROGRAM MEMORY :	SINGLE patches : 96 (64 preset + 32 user) MULTI patches : 16 RHYTHM patterns : 36
■ MULTI CAPABILITY :	4 SECTIONs + DRUM SECTION
■ RHYTHM OPERATION :	Start/Stop. Intro/Ending. Fill In. Auto Fill In
■ AUTO ARPEGGIATOR :	8 Tone Colors. Beat(1/8, 1/16), Range(1/2/3 Octaves), Form (Up. Down, Up/Down, Random), Volume
■ SINGLE EDIT :	* Volume, Key Fix, Fixed Key No., Chorus On/Off * Wave Select, Solo On/Off * Vibrato Speed, Vibrato Depth, Vibrato Shape, Auto Bend Time, Auto Bend Depth * Level. Attack Time, Decay Time, Sustain Level, Release Time. KS Envelope Level, Velocity Curve
■ MULTI EDIT :	SECTION Play. SINGLE Assign, Receive Channel. Level. Tune, Transpose, Zone Hi, Zone Lo
■ RHYTHM EDIT :	RHYTHM Volume, HAND PERCUSSION On/Off, AUTO APREGGIATOR On/Off, AUTO ARPEGGIATOR Volume, AUTO ARPEGGIATOR Form, AUTO ARPEGGIATOR Range, AUTO ARPEGGIATOR Beat, AUTO ARPEGGIATOR Tone, AUTO FILL IN On/Off, AUTO ARPEGGIATOR Volume
■ JACKS :	DC IN, LINE OUT(R, L/MONO), HOLD, HEADPHONES, MIDI IN/OUT/THRU
■ DISPLAY :	8 Segment LED x 3
■ DIMENSIONS :	966.5 x 208.1 x 76.5 (mm)
■ WEIGHT :	4.3 kg

A REFERENCE TO RADIO INTERFERENCE

"This equipment generates and uses radio frequency energy and it not installed and used properly, that is, in strict accordance with the manufacturer's instructions' may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment dose cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

reorient the receiving antenna
relocate the drum machine with respect to the receiver
move the drum machine away from the receiver
plug the drum machine into a different outlet so that drummachine and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:
"How to Identify and Resolve Radio-TV Interference Problems."
This booklet is available from the US Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

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